

IN THIS ISSUE: Pre-game field safety assessment

THE OFFICIAL PUBLICATION OF THE **SPORTS TURF MANAGERS ASSOCIATION**

MAY 2019

# SportsTurf

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See  
pg 42

## ALSO INSIDE

- » GPS on athletes for field management
- » Workplace violence: reduce the risk
- » The Interview: Dr. Micah Woods
- » The Appelfeller Report, Part 1



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**On the cover:** This month's Field of the Year Award winner, Chris Webb (not pictured), says, "As a state university in the Chesapeake Bay Watershed, we are restricted from applying any phosphorus unless we have a soil test showing a deficiency. Since taking over in 2016 we have not applied any phosphorus to the field. We did, however, notice a need to incorporate a micronutrient package into our agronomic plan. To find something that worked within our budget and our needs, we partnered with a local company to create our own blend, Hydra CNU. This has allowed us to have one organic product that meets our needs for plant health, microbial thatch management, and nutrient retention."

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## FROM THE SIDELINES

# Tar Heel turf a sore point



Eric Schroder / Editorial Director / [Eschroder@epgmediallc.com](mailto:Eschroder@epgmediallc.com) / 763-383-4458

**LAST MONTH** the University of North Carolina in Chapel Hill announced it would install synthetic turf in Kenan Memorial Stadium. Natural grass advocates were quick to react, sending a letter to the brass at UNC that mentioned in its first paragraph that the field at Kenan is the reigning STMA's College Football Field of the Year Award winner. The letter, from the Turfgrass Producers International and the North Carolina Sod Producers Association, and also signed by North Carolina sod farmer Keaton Vandemark, shared details from a recent study published by the *American Journal of Sports Medicine* that points to an increase in injuries on synthetic turf. The UNC Board of Governors, UNC Director of Athletics Bubba Cunningham, UNC Campus Health Executive Director Ken Pittman and Agriculture Commissioner Steve Troxler were among the officials who received the letter.

The decision to move to artificial turf at Kenan was announced in late March as new head coach Mack Brown wanted the switch. In a statement, UNC said the move was the "best option for our football team" and for Kenan Stadium as it is used by other varsity programs.

According to the UNC statement the synthetic system planned for Kenan is said to have better shock absorbency and improve safety. Cunningham added that after building and updating multiple facilities in recent years, the department has learned a great deal about what works best in various venues and how the latest synthetic surfaces perform under heavy use.

"It sets a precedent by one of North Carolina's leading educational institutions who has chosen to replace a locally-grown, successful, NC agricultural product with an out-of-state plastic product that is not only more expensive, but less safe for NC kids and athletes," the letter said.

The letter also said, "North Carolina schools and communities look to the UNC system to set the standard for safety and health, and we feel that this decision falls far short of the positive example expected of the UNC system's flagship institution.

"Furthermore, it is also clear that no consideration was given to the impact of this decision on North Carolina's agricultural community or the precedent that it sets for local schools, athletic fields, and community parks. Every year, NC Sod Producers grow over 13,000 acres of sod valued at \$47 million but lose local business to out-of-state plastic, synthetic field companies that falsely claim their product is cheaper, safer, and maintenance free when in fact none of which are true. Kenan stadium has long been a perfect venue to highlight the NCDA slogan 'Got to be NC Agriculture,' and it is a public insult to NC's agricultural industry that this locally produced agricultural product may be replaced with an out-of-state plastic product."

### The Appelfeller Report

Yeah, sounds like a bad late night TV show but I think this new series may prove more interesting than that. Weston Appelfeller, CSFM, will be periodically sharing his experiences working for the new AustinFC franchise in Texas. It's not the norm to hire a turf expert this early in the process – the first match isn't until 2021. We're hoping Weston's story sets an example for other front offices about getting their surface person on board soon enough to do some good. See page 36 to catch up with Weston. **/ST/**

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## PRESIDENT'S MESSAGE

# Thoughts on synthetic turf or natural grass



Jody Gill / CSFM / [jgill@bluevalleyk12.org](mailto:jgill@bluevalleyk12.org) / @JodyGillTurf

**BUT FIRST**, a few facts. The *American Journal of Sports Medicine* recently published the results of a study titled "Higher Rates of Lower Extremity Injury Rates on Synthetic Turf Compared with Natural Turf Among National Football League Athletes: Epidemiologic Confirmation of a Biomechanical Hypothesis."

Briefly summarized, the results of the study indicate the following:

- 1,280 NFL games (213,935 distinct plays) were played during the 2012-16 seasons
- 4,801 lower body injuries occurred affecting 2,032 NFL players
- Synthetic turf resulted in a 27% increase in non-contact lower body injuries
- There was a 56% higher knee/ankle/foot injury rate on synthetic turf resulting in any time lost from injury and a 67% higher injury rate resulting in > 8 days time lost from injury.
- There was a 68% higher ankle injury rate on synthetic turf resulting in any time lost from injury and a 103% increase in injury rates on synthetic turf resulting in > 8 days time lost from injury.
- Applying the incidence rate ratios of injuries in this study, if every NFL game were played on natural grass during these five seasons, there would have been 319 fewer lower body injuries.
- 1 in 5 concussions are caused by head-to-turf impacts and that the critical fall height for concussions on synthetic turf is less than half of the critical fall height on natural grass.

Additionally, results of recent NFL player surveys indicate that well over 80% of players surveyed believe that synthetic turf contributes more to injury, causes more soreness and fatigue and is more likely to shorten their career. Why do so many owners and coaches ignore these players and the research? Is the monster truck jam really more important? Actually, they can have other events and still have a high quality, natural grass field. Professional sports field managers and contractors now have the technology, experience, education and skill to re-sod and re-paint a field and have it ready for play in a few days.

I'm not against synthetic turf; I think it's an excellent surface for intramural fields or elementary playgrounds but professional athletes are trying to tell us it may not be the best choice for a competition field. I was recently contacted by the mom of a talented high school soccer player who suffered two significant knee injuries over 2 years while playing on synthetic turf. Kyle's injuries and resulting surgeries effectively ended his soccer career and any chance of an athletic scholarship. Kyle said "grass is easier to turn on and if you slip, you don't get caught like you do on turf, you just rip out the grass with your cleat." He didn't think much about divots until after he blew out his knee twice. Like sports field managers, Kyle now understands that a divot in a natural grass field means an injury may have been prevented. Maybe owners, athletic directors, trustees, school boards and coaches need to listen to Kyle and a majority of professional athletes and read the research results so they can make informed decisions. They may think synthetic turf makes their job easier or allows more stadium revenues, but they need to consider the real long-term costs. **/ST/**

Jody Gill, CSFM



## @TAR\_HEELS\_TURF

Chapel Hill, NC March 6

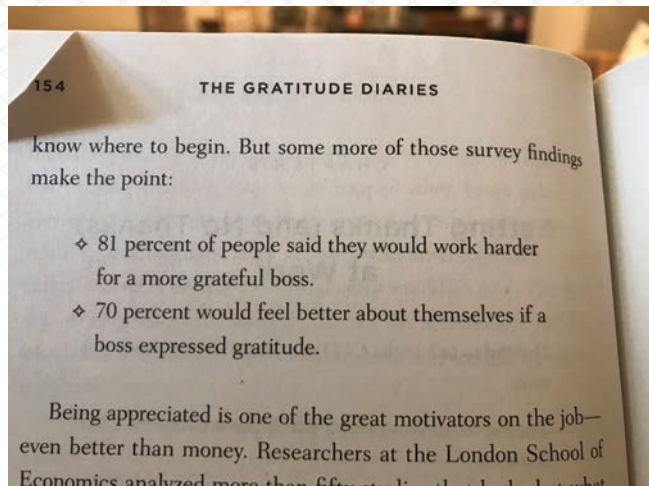
3/4 cores at softball today. Can still see the sand slits we put in last summer. @CgcChad



## @NATURALGRASSMAN

Milwaukee, WI March 10

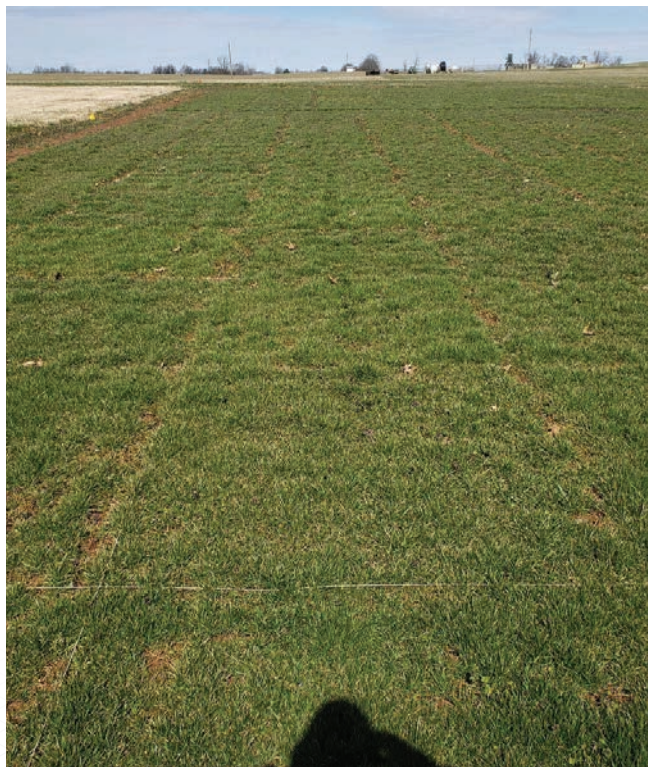
Sure sign of spring: Tarp removed from playing field at Miller Park. 'grass has been doing well' <http://via.fox6now.com/YZm6H> via @fox6now



## @NEONGRAPEFRUIT

Phoenix, AZ March 8

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## @UKTURF

Lexington, KY March 11

After a long rainy winter inside, it's nice being out on a sunny day taking quality data on our new @kmorris\_NTEP tall fescue, @alistturf tall fescue, and CTBT ryegrass trials.





**@CDBELTZ**

San Diego, CA February 19

@SDSUBbaseball ready for tonight's game. Amazing how much Time you have in a day when there is only one game and no rain



**@TYLERCARR11**

Fayetteville, AR March 31

Put in plastic they said...it is maintenance free they said...



**@KMORRIS\_NTEP**

Beltsville, MD March 21

Planting, and growing in our standard entries (ie. Check varieties) for three new NTEP warm-season grass trials starting this summer



**@NSHERRY2**

Baltimore, MD April 3

One more sleep!

# GPS ATHLETE PERFORMANCE TRACKING DEVICES FOR SPORTS FIELD MANAGEMENT AND RESEARCH

// By CHASE STRAW, PHD, FRANCESCA PRINCIPE, DIANE WIESE-BJORNSTAL, PHD, AND BRIAN HORGAN, PHD

Athlete performance tracking devices are becoming prevalent in team sports, especially at the professional and collegiate levels. An individual device is small (~3 x 1.5 inches) and usually inserted into a specially designed vest that holds it to an athlete's upper back (Figure 1). A device typically contains an accelerometer, gyroscope, magnetometer, and global positioning system (GPS) that are used to measure several variables regarding athlete performance *during competition* while on a sports field, such as distance covered, top speeds, sprint counts, accelerations, decelerations, and impacts. The GPS is particularly useful for tracking the athlete's location and time spent within a field. Data are used by coaches, trainers, and sports scientists to develop programs that better prepare athletes for competition and optimize their on-field performance, but can they also be used for sports field management and research?

## Sports field management

GPS athlete performance tracking devices are accompanied with software for viewing measured data. The software is user-friendly and normally accessible online with a login name and password. Within the software, each athlete's performance data are broken down by individual sessions, such as practices and games. This includes a performance summary of the session that is comprised of averages or counts of the measured variables, as well as maps generated from the GPS data (Figure 2).

Data and maps can be viewed for individual athletes, a specified group of athletes, or the entire team. They can also be viewed within certain timeframes of a ses-

sion. Additionally, video footage can be added and replayed to retroactively view athletes' performance as it happened in real time. If a team is already using the devices for their own purpose, this information could be free and readily available to a sports field manager to benefit field management.

There are several ways the information from the devices could be valuable for sports field management. Objective field usage information can provide justification to apply programs that mitigate concentrated areas of wear, like site-specific management or mandatory requirement of field and practice drill rotations. This would probably be most beneficial on practice fields, since only partial field usage info can be gathered on game fields because only the home team information will likely be accessible).

If field usage is then combined with field characteristics (e.g. surface hardness, soil moisture, infill depth) and documented over time, the effectiveness of previous management strategies could be assessed to guide future management decisions. Furthermore, the devices offer an opportunity for sports field managers to work collaboratively with coaches and trainers to possibly manipulate field conditions based on gathered data. An example could be irrigating heavily or drying down a field to alter soil moisture and surface hardness levels to perhaps accommodate a coach's desire to achieve certain athlete per-



Figure 1

formance thresholds. Given all the scenarios sports field managers are confronted with, there are likely many other potential management applications for the devices we have not mentioned here.

## Sports field research

Sports fields are comprised of several measurable characteristics that may influence physical and psychological athlete-surface interactions. Among the physical factors, harder surfaces, for instance, have increased peak vertical reaction forces when an athlete lands/falls or applies a force. Game speeds are also thought to generally increase with harder surfaces and could influence athlete performance and injury occurrence due to higher collision rates, fatigue, or exposure to excessive or prolonged loading.

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THE LEADER.

While there remains limited research investigating psychological contributors to athlete performance and injury occurrence in relation to field characteristics, a recent University of Georgia study did report that the unpredictability of a highly variable natural turfgrass field could influence athletes' perceptions of the field. As a result, behavioral factors such as aggressiveness or tentativeness were said to be affected, and these likely contribute to overall athlete performance and injury occurrence too. GPS athlete performance tracking devices could be a valuable research tool that can further our understanding about the link between field characteristics and athletes' performance, perceptions, and injury occurrence.

A preliminary study using the devices began in fall 2018 by a team of turfgrass science and sport and exercise psychology investigators from the University of Minnesota. The study involves a university club sports team (15 total athletes), which practices on artificial turf and plays on natural turfgrass (Figure 3). The devices were worn by the athletes for every practice and game during the fall 2018 season to obtain their performance data. Field characteristics were measured once a month at the practice field (surface hardness and infill depth) and the morning before each game at the game field (soil moisture, soil compaction, surface hardness, turfgrass quality). Methods to evaluate athletes' perceived susceptibility to injury (pre-season questionnaires) and perceptions of the playing field (pre- and post-season on-field interviews) were incorporated. All injuries were recorded, and athlete position and footwear are being considered as well. Data are being compiled and analyzed to explore a variety of questions, including:

- How do field characteristics (within the field and over time) influence athletes' performance and injury occurrence?
- How do athletes' perceived susceptibility to injury and perceptions of the playing field affect actual on-field performance and injury occurrence?
- Do performance and psychological factors overlap, and can this information be used for athlete injury prediction and prevention under certain playing field conditions?

Results from this type of study may benefit sports field managers by suggesting new management strategies to help meet team expectations of field conditions. It may benefit

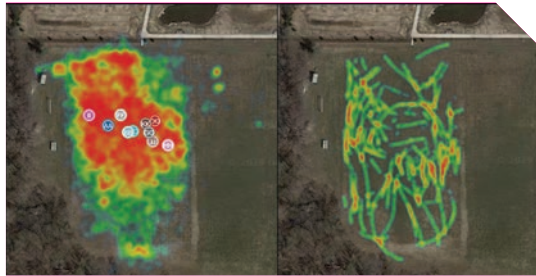


Figure 2



Figure 3

sports psychologists, strength and conditioning coaches, and athletic trainers by assisting in the development of programs to improve athletes' perceptions and confidence about certain field conditions. All of which may enhance athletes' overall performance, while reducing their risk for injury.

## Challenges

GPS athlete performance tracking device's inception into sports field management and research does come with challenges, the most evident being athlete privacy. For management, this may not be as big of an issue as with research, because the most beneficial information to a sports field manager would be field usage maps. These can be easily shared by coaches or trainers as computer screenshots, for example, which would not contain athlete data. General athlete performance could be an informal discussion between all parties without a sports field manager actually seeing any athlete information. For research, privacy can be a larger issue since data is essential to the investigators. To overcome privacy issues when conducting research involving human participants, several procedures take place that ensure proper ethical guidelines are being followed, such as using IDs instead of names, appropriate data handling and security, etc.; however, even with

these guidelines in place it can still be difficult to have athletes or teams agree to participate due to concern of their information being mishandled. Technical and logistical challenges, like measurement accuracy and amount of data, are also issues that will need to be considered. It is for all these reasons that it can be difficult to do large-scale studies involving several teams and fields. Understanding the multifaceted influences of athletes' performance, perceptions, and injury occurrence is a highly complex process, which cannot be explained by only a few studies. Nevertheless, research involving new technologies, innovative approaches, and key collaborations can move towards filling knowledge gaps that have not yet been fully explored in order

to benefit our cause. Technology now exists in sports field management and research where "athlete safety" and "field playability" do not need to be used as broad terms; rather, they can be quantified, to a certain extent, on an athlete-by-athlete and field-by-field basis. Right now, most sophisticated technologies are likely only relevant to higher-end sports fields. Even if they are not applicable in your specific situation, technologies will only improve and become more widespread moving forward. **IST/**

*Chase Straw is a Postdoctoral Research Associate in the Department of Horticultural Science, Francesca Principe is a MS student in the School of Kinesiology, Diane Wiese-Bjornstal is a Professor and Associate Director in the School of Kinesiology, and Brian Horgan is a Professor and Extension Turfgrass Horticulturalist in the Department of Horticultural Science at the University of Minnesota. The authors would like thank the Minnesota Park and Sports Turf Managers Association for their support; University of Minnesota Recreation and Wellness for their collaboration and use of facilities; Troy Carson and Josh Friell, The Toro Company, for use of their field sampling devices; and Brian Neff, Emma Sackett, Will Wardrop, and Kristin Wood, University of Minnesota students, for their assistance.*

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In 2013, TIFTUF™ was entered into the National Turfgrass Evaluation Program (NTEP) bermudagrass trials where it is being evaluated in 20 locations across the United States until 2017. NTEP results from 2014 reveal that TIFTUF™ scored the highest quality ratings in the following test locations: North Carolina, Florida, Mississippi, Tennessee, Texas, Oklahoma and California. TIFTUF™ also ranked in the highest statistical group for quality in Alabama, Georgia, Indiana, Kansas, Kentucky and Missouri.

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Oregon State University

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Kansas State University

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J. Bryan Unruh, Ph.D.,  
University of Florida

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# Pre-game field safety assessment: future implications of risk assessment

// By WALKER, K.S. AND E.G. WALKER //

The primary goal of every sports turf manager is to produce a safe, uniform, playing surface to prevent injuries to athletes while being aesthetically pleasing to all involved. Due to high expectations regarding player safety by sports turf managers, players, and coaches, field assessments and safety checks need to be assessed and addressed in our cultural management practices before games so field conditions can be improved before game time.

The current STMA sports field safety and maintenance checklist visually evaluates the evenness and traction of the playing surface for natural grass. Evenness is impacted by overall turfgrass quality (uniformity, color, density, and rooting). Traction is critical to generating and controlling player speed and turning. Traction is impacted by turfgrass coverage and to some extent field drainage (relates to soil moisture). Poor traction, either a lack of turfgrass coverage or drainage (slickness), can lead to muscle pulls and a variety of other injuries. In addition to visual assessment, maintenance and safety checklists also need to assess agronomic properties such as soil compaction and surface hardness that occurs from repeated wear on natural grass. Surface hardness affects the player's ability to turn sharply, and along with soil compaction, increases athlete injury due to falls and tackles to the ground. All of these factors are important in cultivating a healthy turfgrass system that is resistant to traffic and wear from sports. Of course, all of this needs to be assessed in a timely manner to be ready before the next game.

On the current checklist, communication between facilities and athletics is assessed because that relationship is critical in producing a safe playing field for



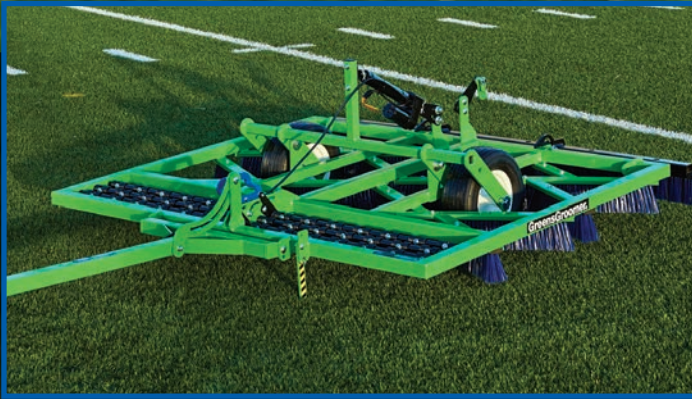
*Student Ben Koisti performs a turf firmness test.*

athletes. The University of Minnesota Crookston athletic department asked for assistance from the turf management program in providing some management

strategies for facilities to use to improve the overall turfgrass quality of the football field. U of M Crookston's field differs from most collegiate fields in that a

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high school football team plays their home games on the field. During a scheduled turf science lab, the students performed a visual assessment of overall turfgrass quality and coverage on the football field using the playing surface for natural grass section from the STMA checklist. In addition, they collected data on soil compaction using a FieldScout SC 900 meter and on soil moisture using a FieldScout TDR 300, both of which are hand-held devices that provide instant results. The football field was divided into 30 subplots where six readings were randomly taken per subplot. Those six readings were averaged to give a subplot mean per measurement. The percentage of subplots resulting in  $\geq 300$  psi for soil compaction (4" depth) was calculated for the field where  $<30\%$  received a little to none compaction rating, 30-50% a slight compaction rating, 50-75% a moderate compaction rating, and  $>75\%$  a severe compaction rating. Calculated results indicated that 50% of the football field was moderately compacted and that 100% of the center of the field (between hash

marks) was severely compacted before game one. Eighty-six percent of the field was saturated ( $>40\%$  VWC for a silty clay loam soil). It was evident from the assessment that soil compaction below ground was directly affecting quality of above ground plant responses.

The students presented their findings to both athletics and facilities to gain the experience of working with both groups and to understand how important communication is between the two departments. Facilities was not able to immediately aerate the field, so we decided to do a semester long pilot study for the remaining home games. Soil compaction increased on the field until facilities was able to perform aeration (solid-tine) after game four, which decreased soil compaction to less than

Field Assessment	Game 1	Game 2	Game 3	Game 4	Game 5
<b>Football Field</b>					
Soil Compaction	77%	0%	0%	90%	0%
Soil Moisture	77%	100%	100%	100%	100%
Surface Firmness	ND	0.6-0.8	0.5-0.7	0.3-0.4 (100% Firm)	0.5-0.6
Turfgrass Color	.90	.90	.92	.90	.85
<b>Soccer Field</b>					
Soil Compaction	4%	0%	0%	0%	0%
Soil Moisture	96%	100%	100%	100%	100%
Surface Firmness	0.6-0.7	0.6-0.7	0.5-0.6 (30% Firm)	0.5-0.6	0.4-0.5 (75% Firm)
Turfgrass Color	.91	.90	.92	.90	.85

**Table 1.** Soil compaction, soil moisture, surface firmness, and turfgrass color for both the football and soccer fields before each home game in 2017. ND=No Data

**Soil Compaction:** % of measuring points having a cone index of  $>300$  psi in top 4 inches ( $<30\%$ -little to no compaction, 30-50%-slight compaction, 50-75%-moderate compaction, and  $>75\%$ -severe compaction).

**Soil Moisture:** % of measuring points having a % Volumetric Water Content of  $> 40\%$  (Saturated silty clay loam soil).

**Surface Firmness:** the lower the penetration value, the firmer the turf ( $<0.49$  inches).

**Turfgrass Color:** the Normalized Difference Vegetation Index (NDVI) measurements can range from -1 to 1, with higher values indicating greater plant health.

10%. We recommended to facilities that they aerify every 2 weeks because less than a week later 53% of the field was moderately compacted. Soil moisture was saturated,  $>70\%$  of the field, three of the four remaining games of the season. The recommendation to facilities was to reduce irrigation on the field and in the future use a wilt-base irrigation approach and be cognizant of the weather when irrigating.

After collaborating with the sport recreational management department and the athletic trainers, this project was redesigned in 2017 and 2018 to include player injury data to determine whether agronomic improvements identified in the pre-game assessment produced field conditions that reduced player injury. Further analysis will standardize injury

incidents as a function of injury exposure (i.e., number of plays football players are on the field where they run the risk of getting injured) and compare that risk to the agronomic data.

Two additional measurements were added to the pre-game assessment, surface hardness and turfgrass color. A FieldScout TruFirm was used to determine the firmness of the playing surface to compare surface consistency and variability. Turfgrass color was determined using a FieldScout CM 1000 Chlorophyll meter. A second site was also added to the project, the newly renovated girls' soccer field. At the end of the project, a survey was created to ascertain the perceptions of field and playing conditions from the coaches, trainers, and players. The football field





# JOHN MASCARO'S PHOTO QUIZ

JOHN MASCARO IS PRESIDENT OF TURF-TEC INTERNATIONAL

////////

ANSWER ON PAGE 33

## CAN YOU IDENTIFY THIS SPORTS TURF PROBLEM?

**PROBLEM:**

Painted line is void of paint in strange shape

**TURFGRASS AREA:**

Multipurpose field

**LOCATION:**

Dedham, Massachusetts

**GRASS VARIETY:**

Synthetic turf field



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was severely compacted before game one and game four, 77% and 90% respectively in 2017 (Table 1). Surface hardness on the field was 100% firm before game four (no data available for game 1). There were also two injuries reported after game two and five, where there were no issues with soil compaction or surface hardness.

For the soccer field, there was little to no soil compaction measured on the field (24 subplots plus goals). Surface firmness did reach 75% firm on the field before game five where two injuries were reported (shin splints). Both goal areas were severely firm before game five. There were many instances where injuries occurred but the field (football and soccer) was not compacted or hard. Since both the football and soccer field was saturated throughout the season this could have resulted in poor traction where the playing surface was slick causing injury to athletes. In 2018, there were games where weather conditions (snow cover) prevented data collection (Table 2). The number of injuries that occurred during these games equals the number of injuries on all other games of the season. Weather, and how it affects field conditions, should be addressed in future revisions of the sports field safety and maintenance checklist as it relates to player injury.

At the end of the season players, coaches, and trainers were given access to the survey to determine their perceptions of the fields. Forty-nine athletes, three trainers, and four coaches completed the survey at the time of this publication. When asked if the athletes noticed an improvement in field conditions between 2017 and 2018, 8 responded yes, 17 responded no, and 24 had no basis for comparisons (freshman or transfer student athletes). When asked how the athletes perceived the playing conditions

Field Assessment	Game 1	Game 2	Game 3	Game 4	Game 5
Football Field					
Soil Compaction	0%	0%	ND	0%	ND
Soil Moisture	100%	100%	ND	100%	ND
Surface Firmness	0.6-0.9	0.5-0.7	ND	0.4-0.5 (40% Firm)	ND
Turfgrass Color	.91	.92	ND	.78	ND
Soccer Field					
Field Assessment	Game 1 & 2	Game 3 & 4	Game 5 & 6	Game 7	
Soil Compaction	0%	0%	ND	0%	
Soil Moisture	100%	100%	ND	100%	
Surface Firmness	0.5-0.7	0.5-0.7	ND	0.5-0.6	
Turfgrass Color	.93	.89	ND	.66	

**Table 2.** Soil compaction, soil moisture, surface firmness, and turfgrass color for the football and soccer fields before each home game in 2018. ND=No Data due to weather.

**Soil Compaction:** % of measuring points having a cone index of >300 psi in top 4 inches (<30%-little to no compaction, 30-50%-slight compaction, 50-75%-moderate compaction, and >75%-severe compaction).

**Soil Moisture:** % of measuring points having a % Volumetric Water Content of > 40% (Saturated silty clay loam soil).

**Surface Firmness:** the lower the penetration value, the firmer the turf (<0.49 inches).

**Turfgrass Color:** the Normalized Difference Vegetation Index (NDVI) measurements can range from -1 to 1, with higher values indicating greater plant health.

of the fields, 1 said good, 4 said average, and 44 said poor.

At the start of this project, we wanted to be able to quantify the relationship between the agronomic and risk assessments that will lead to strategies intended to improve turfgrass field conditions. We also wanted to be able to identify cultural management strategies that would be beneficial to sports turf managers by reducing the risk of player injuries. Soil cultivation practices, specifically aeration every two weeks, is important in reducing soil compaction and surface hardness on high traffic fields. Although soil and plant health for the existing turf improved through soil cultivation practices, the same empha-

sis needs to be placed on improving the above ground turf coverage and overall turf quality. Overseeding should be part of every management plan to fill in divots, holes, and ruts created by constant traffic immediately following play.

Communicating and highlighting the importance of these efforts made by sports turf managers to improve player safety goes a long way to changing the perceptions of all involved. **IST/**

*Kristina S. Walker, PhD, is associate professor of agronomy, University of Minnesota Crookston; Eddie Walker II, PhD, is an assistant professor of sport and recreational management in Crookston. References are available at [www.sportsturfonline.com](http://www.sportsturfonline.com)*

# one-trick pony noun

## Definition of *one-trick pony*

: one that is skilled in only one area

also : one that has success only once

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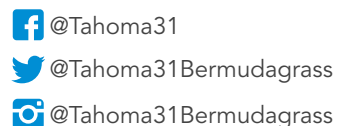
\*Study sponsored by USGA & USDA, conducted by researchers at Oklahoma State University, *Evapotranspiration Rates of Turf Bermudagrasses under Nonlimiting Soil Moisture Conditions in Oklahoma*, published in *Crop Science*, March 2018.

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# TOPDRESSING 101

Sports fields, like athletes, benefit from a planned, consistent conditioning program to help them perform at their best. In the case of sports fields, topdressing should be an integrated part of the overall turf management program used to keep fields in game-ready condition throughout the season.

“Regular topdressing helps maintain the health, vigor and playability of natural turf fields. It’s an important practice whether you’re maintaining the investment you made in new fields, or trying to rejuvenate older existing fields,” says Scott Kinkead, executive vice president of Turfco Manufacturing, Inc.

The beneficial effects of topdressing are well known in the sports turf industry today. Common uses for topdressing include:

- Maintaining a healthy thatch layer over time, to counter destructive thatch buildup
- Amending the soil composition to correct problems such as drainage and soil compaction
- Extending the playable life of artificial turf
- Maintaining the field’s crown or smoothing out uneven fields

“Knowledge is power when it comes to turf management,” says Kinkead. “It’s always good to get a soil analysis done prior to launching a topdressing program.”

Look to local universities and agricultural extension agencies, as well as material suppliers, for soil analysis testing. Often the testing organizations have people on staff who can help assist turf managers with program development guidance.

When starting a topdressing program, the first step is to decide what you want to accomplish. By analyzing the soil structure, you can determine the optimum topdressing mix required to either build up or maintain soil health. You can match existing soil structure or achieve a variety of mixes up to 100% sand. Consistency in particle size over time is critical to turf vitality. Unevenly matched sand applications can lead to layering or perched water tables.

“Find a quality material supplier to work with in your area, one that can provide you with a consistent source of topdressing with consistent particle size” says Kinkead.

Now it’s time to put your topdressing program into action. When choosing a topdressing machine, choose wisely because odds are you will be using it for a long while.

**Size.** The choice of topdressers should be aligned to the size, number and complexity of your turf management operation. Do you have one clay court or 30 soccer fields? Do you have a mix of baseball, football and soccer fields, or is there one primary field you plan on topdressing? How far and how much material do you need to transport? Choosing from 1 cubic yard, to 2½ or even 4 cubic yard capacity models depends on the area you need to cover. If you’re in charge of a few fields, say one to five, a simple but efficient 1-2 yard, ground-driven drop spreader might be just the ticket for you.



Larger spinner-style topdressers can be ideal for managers of large turf operations, such as college and university sports facilities, private and municipal sports/recreation complexes. However, larger spinner topdressers will require tractors with hydraulic flow of 6-10 gpm to tow and operate a 4 cubic yard spinner.

**Versatility.** Is your topdressing material stored outside? Then, you want a model that can handle wet and dry material while keeping the spread consistent. “Moisture consistency and type of material is what we had in mind when we developed the continuous Chevron conveyer belt for our Mete-R-Matic series of topdressers,” Kinkead says. Turfco wanted to ensure uniform application of all types of topdressing regardless of moisture content. The right machine can handle a variety of mixtures including calcined clays on your infield, compost, gypsum and lime on natural turf, as well as crumb rubber infill on your artificial turf fields.

**Tow vehicles.** Another consideration is what kind of vehicle you have to tow the topdresser. A turf truck can accommodate most ground-driven topdressers that are designed for ease of use and reliability. The topdresser’s wheel traction mechanically powers the spread operation. As a safeguard against operational miscues, the drop rate remains constant regardless of any changes in wheel speed.

**Complexity.** The advantage of some of the larger hydraulic top spinners is the additional efficiencies designed into the equipment. For example, the Turfco WideSpin 1550 lets the operator adjust the angle down to drive material deeper into the turf canopy. “Our patented smart controller allows the groundskeeper to calculate rates, lock in preferred applications and get the same spread rate each time,” says Kinkead.

For groundskeepers that require about 4 cubic yards, the Turfco CR-15 large area topdresser/materials handler can be a reliable option. It provides the ability to calculate rates and keep reliable spreads.

“We’re happy to help turf managers with practical advice based on our experience and we have a substantial library of articles about topdressing that managers can draw from too,” says Kinkead. **/ST/**



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# WORKPLACE VIOLENCE: HOW TO REDUCE THE RISK OF TRAGEDY

// By PHILLIP M. PERRY



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**I**t's a nightmare scenario that haunts every business owner: A troubled employee's simmering anger finally boils over into an act of workplace violence. Too often the results are human injury, traumatized employees, and a damaged business reputation.

"A violent event leading to injuries and loss of life can be devastating to a business," says Wayne Maxey, executive consultant for Workplace Guardians, a consulting firm in San Diego. "Some organizations never recover because of the impact on their surviving employees and on their brand."

Not to be overlooked, as well, is the financial cost when injured members of the public bring costly lawsuits. "While theories of negligence vary by state, very often employers can be sued for negligent hiring, negligent supervision, and negligent retention of employees," says attorney Kathleen Bonczyk, founder of the Workplace Violence Prevention Institute in Orlando.

The resulting financial damages can be crippling for organizations lacking costly legal talent. "Small businesses are at higher risk of financial devastation because they possess limited resources to implement comprehensive preventive approaches," says Felix P. Nater, president of Nater Associates, a security consulting firm operating out of New York City and Charlotte, NC. "Yet they're no better than large organizations at predicting when disgruntled employees will transition into violent action."

## Viable threats

Every employer must take steps to prepare for an unexpected act of workplace violence. Experts say that an effective policy starts with understanding the various manifestations of violence, including less extreme behaviors that too often grow into something worse.

"Most employers think of violence in terms of physical assault or homicide," says Nater. "However, it can also take the form of threatening behavior, verbal abuse, intimidation, and harassment." Threatening behavior, says Nater, can mean the shaking of fists, confrontation with or threatening of a victim with objects, and blocking another person's movement. Even non-physical actions can qualify: "Violence can take the form of words, gestures, intimidation and bullying, and inappropriate conduct such as swearing, insults and condescending language." Many such acts, he says, can rise to the level of harassment, activity that attempts to "demean, embarrass, humiliate, annoy, or cause alarm."

Any viable threat to cause bodily harm is an act of violence and constitutes a crime under most state laws. Here are some examples in the form of statements made by one employee to another:

- "I'm going to beat you up after work."
- "Employees who kill their supervisors have the right idea."
- "I'm afraid I'm going to lose control, and I have guns."

All such statements are serious matters. "You need to take action right away in response to any workplace threat," says John M. White, president of Protection Management, a consulting firm in Canton, OH. "If you ignore it, other employees will believe that making threats is okay. Then, eventually, someone may well carry out their threat." All employees must realize that if they say it, it's as bad as if they did it.

### Gray areas

Some employee actions fall into the category of disruptive activity rather than workplace violence. Maybe Barbara tosses a pile of papers on the floor and begins to scream about how lousy the company is. The correct response to such an event is to counsel Barbara, come to a better understanding of the cause of her anger, and enlist her aid in improving the workplace environment. If Barbara were to knock a laptop off the desk in anger, on the other hand, she might be disciplined for destruction of company property.

Still other actions fall into a grey zone between harmless and harmful. What should you do, for example, when humor contains a violent element? Suppose Sam tells Andy in a joking tone of voice, "I'm going to knock your block off after work." In such cases, experts advise taking the individual aside and counseling that you realized they were joking, but that such behavior is still not acceptable.

More troubling are statements for which a humorous intent is unclear. Sam's assertion in the previous paragraph, if uttered without sufficient humorous tone, might or might not be a serious threat. "Sometimes it can be hard to tell," says White. "It all depends on tone of voice, the environment, and the body language. But the investigation process should try to come to a conclusion."

In such cases White suggests starting to watch the employee's behavior more closely. Does Sam have attendance problems? Is he violating other organizational policies? Has he health or financial problems? "Try to observe the employee without being too invasive."

A final category of event is the statement that is obviously not a joke, but is so veiled as to call into question its violent intent. Suppose Alan tells his supervisor: "You had better not treat me like this." His voice has a warning tone and his demeanor is dark, but is the statement a threat to commit violence or just a threat to quit and go work for a competitor? The answer's elusive. The best response is to take Alan aside and counsel him on what caused him to make his statement and what he had in mind.

When in doubt, trust your gut and don't over-analyze. If you feel afraid, there is something amiss.

Barbara's outburst, described above, while perhaps innocent of violent intent, may also provide an early warning sign of more severe trouble down the road. Identifying such warning signs, and addressing them promptly, is the best way to obviate extreme behavior.

"Supervisors should be alert for employees who start to behave in strange ways, such as barricading themselves in their cubicles, or making statements such as their supervisors are poisoning their food," says Maxey. Be alert for those employees who are constantly unable to get along with others, who refuse to take responsibility for their own actions, who are quick to

### DEALING WITH ORDERS OF PROTECTION

Many cases of workplace violence originate in the home. "An employer who receives an employee order of protection against a non-employee spouse must assess the risk to the workplace," says Felix P. Nater, president of Nater Associates, a security consulting firm. Nater suggests consulting with local law enforcement officers on the best procedures to follow (such as calling 911) if the spouse is spotted on the workplace premises, then training employees in those procedures. Obtain a copy of the restraining order, and keep it on hand to provide to the police when necessary.

Work with the affected employee to reduce risk. The employer might reasonably accommodate the employee with a leave of absence or a flexible work schedule, and institute additional security measures such as changing the employee's parking spot and their work location. "The goal is to protect the workforce and reduce the employer's liability for a violent act," says Nater.

Finally, make sure the employee knows the game plan if the spouse shows up at work. Perhaps she should move to a predetermined location in a back room while the staff calls the police.

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anger, or who respond in inappropriate and exaggerated ways when given minor directives. All can be early signs of greater issues down the road.

Employees should be trained to report any such behavior to supervisors who can start to more closely monitor the troubled worker. "The key is to catch a problem early on. When supervisors fail to address early warning signs, the employee's problems can marinate over time and then get to the point where there is some kind of damaging outburst."

## Zero tolerance

Experts on workplace violence suggest that every employer establish a "zero tolerance" workplace violence policy that mandates termination for acts of violence, or threats of such acts. For less extreme behavior, an employer should mandate a system of progressive discipline that may include administrative leave and mandatory psychological evaluation and counseling.

A workplace policy should also address the subject of weapons. "No weapons should be allowed in the workplace or in the business parking lot," says Bonczyk. "You would be surprised what people put in their purses and backpacks. Those things include knives and guns."

A caveat is that some state laws allow authorized firearm owners to keep guns in the trunks of their cars. Consult with an attorney to learn if your business is located in a so-called "guns in trunks" state. Once you have written a workplace violence policy, make it available to all employees. Don't just put the document on the shelf and forget it. "I can't tell you how many places I go into and no one has read the policy in years," says White.

So your workplace violence policy is written, communicated and posted. How should you approach the employee whose behavior violates its terms? Privately and with sensitivity.

"Do not approach the troubled employee in public," says Bonczyk. "That can be devastating and embarrassing, and can

lead to still more aggressive acts." Bonczyk advises pulling the person aside and holding a meeting behind closed doors. "Put away the cell phone and focus 100 percent on the employee."

Start by putting the individual at ease, advises Bonczyk. "Break the ice and give the employee an opportunity to calm down by offering a glass of water or a cup of coffee, and by talking about common topics such as the weather or new movies."

Once the individual seems calm and collected, move on to a description of the behavior you have witnessed. You might open with words such as these: "Josh, yesterday I noticed that you shouted at Sandra when she asked you to help with her presentation. You seemed very angry. What was going on which caused you to behave that way? And how can we help?"

"Focus on what you have seen," says Bonczyk. Describe behaviors that you have actually witnessed rather than trying to interpret emotions or causes. Suggesting that the individual is troubled, or resentful, or envious of another employee's success, will only cause the person to deny the charge and become more upset.

As your conversation proceeds, take steps to calm any emotional outbursts. "If the employee starts to scream and to become aggressive, don't try to interrupt or become aggressive yourself," advises Bonczyk. "Instead, lower your own voice and try to defuse the situation by repeating your desire to understand and to help."

The focus of the conversation should not be on placing blame for behavior, but on offering assistance to help the employee behave better. "Be sincere about your desire to assist the troubled employee," says Bonczyk. "People can tell when you're not."

Once the employee explains what is troubling him, offer whatever assistance is appropriate, says Bonczyk. Suppose Josh says he is having money problems. Here is where you can suggest he speak with a local financial counselor with whom your organization has a relationship. The employee whose behavior relates to something like the serious illness of a family member

## QUIZ: HOW PREPARED ARE YOU FOR AN ACT OF WORKPLACE VIOLENCE?

Take this quiz to assess your preparedness for an act of workplace violence. Score 10 points for each "yes."

1. Have you published and communicated a "zero tolerance" policy?
2. Have you trained your workforce on violence warning signs and reporting practices?
3. Have you built trust and confidence in your workforce so that people feel safe from harm when they report what they see?
4. Have you trained all your supervisors on aspects of workplace violence prevention?
5. Do you resolve all reported observations and reports quickly?
6. Have you prohibited weapons in the workplace?
7. Do you discipline and treat every employee with dignity and respect?
8. Do you carefully vet potential employees for previous incidents of workplace violence?
9. Do you confront misbehaving employees with statements of observed evidence rather than judgments?
10. Have you coordinated with your local law enforcement in advance of any event?

Now total your scores and assess your readiness on this scale: 80 or higher means you are well prepared for an act of violence. Between 60 and 80 means you need to up your game. And below 60 means that you need to start developing good policies and procedures.



may be entitled to time off under provisions of the Family and Medical Leave Act.

Make a note on your calendar for a follow up meeting, perhaps 10 days or 2 weeks later, or even sooner if the situation warrants it. Find out if the employee has made gains in solving his problem and if there is anything else your organization can do to help.

So what happens if, despite your best efforts, the employee makes no progress and the angry or antisocial behavior continues? "If the employee is resistant to change you will need to look at termination," says Bonczyk. Before firing the individual, consult with your attorney to make sure you comply with all federal and state laws. "Put the employee on notice and document everything. Such documentation will be needed later if the employee sues for wrongful discharge."

The act of firing a troubled employee can itself lead to an act of violence. It is prudent to take steps to reduce the risk of injury. "Have a member of law enforcement on hand if you feel the employee may become violent during the termination," says Bonczyk.

Taking quick action to deal with unsettling behavior is important. But so is doing whatever you can to obviate such situations. One of the most effective steps is exercising care when taking on new staff members. "Conduct adequate background screening when hiring a new worker," says Bonczyk. "It is very difficult to coach or counsel a troubled individual once that person has joined your organization." Document your vetting activity, recording the steps you took to uncover any previous history of workplace violence. That will provide important evidence in defending your organization against lawsuits by injured parties. "Plaintiffs' counsels will ask for personnel files to see if employers performed due diligence during the hiring process," says Bonczyk.

Another effective preventive measure involves employee training. "All employees need to know how to recognize at-risk behaviors," says Maxey. "Urge them to report what they observe to supervisors."

Employees often hold back from reporting what they see because they think they might get someone in trouble unnecessarily, or that they might be retaliated against by the person being reported or even by the company. "It is important to communicate that you will support individuals who step forward," says Maxey. "State explicitly that an employee making a report in good faith will not be retaliated against. And establish multiple channels of reporting, including anonymously. That can encourage people to speak up."

Experts on workplace violence emphasize that prevention is a continuing effort rather than a single magic pill. "Employers must engage in an ongoing process involving multiple prevention strategies from hiring to retiring," says Nater.

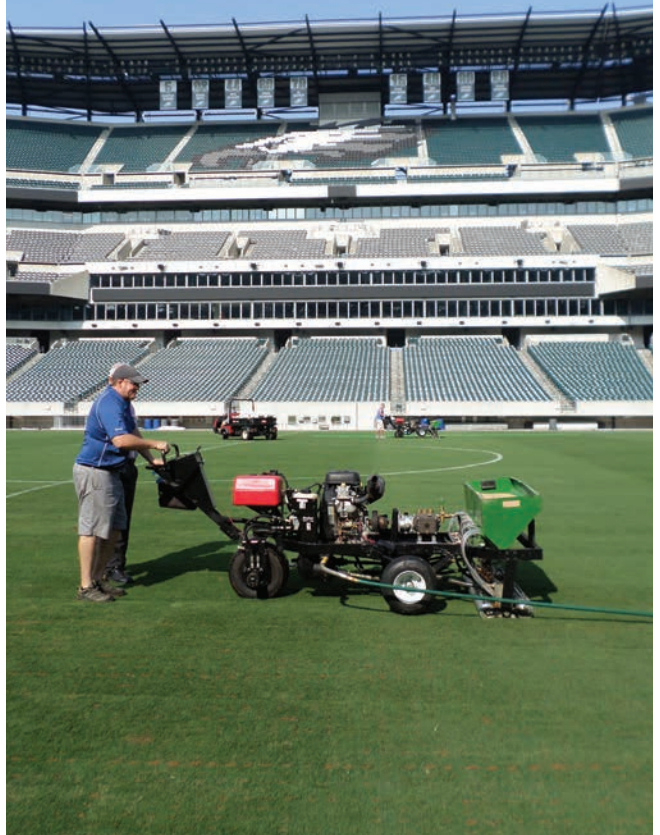
The key to a successful workplace policy is preparation. "Don't assume that a violent incident is not going to happen at your workplace," says Maxey. "Establish a workable policy, communicate it to all of the employees, and make sure everyone knows how to call and report what they see." **/ST/**

*Phillip M. Perry is a freelance writer.*

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## DR. MICAH WOODS



Dr. Micah Woods, Asian Turfgrass Center

This month in “The *SportsTurf* Interview,” we meet Dr. Micah Woods, Chief Scientist of the Asian Turfgrass Center and co-author of the Global Soil Survey that informs the Minimum Level of Sustainable Nutrition efforts with Pace Turf’s Dr. Larry Stowell. Woods travels the world and writes an interesting blog about those travels you can find at [www.asianturfgrass.com](http://www.asianturfgrass.com).

**SportsTurf:** How did your interest in turfgrass begin?

**WOODS:** I grew up in the Willamette Valley of Oregon and always enjoyed gardening. I was also a keen golfer, but by the time I graduated from high school I realized I wasn’t good enough to make a career out of playing golf. The summer after high school I was caddying at Waverley Country Club in Portland, heard that there was a job opening on the

grounds crew, and I got that job. I’d never thought of it before, but within a week of starting that job, I realized that this was a perfect combination for me. Getting to prepare surfaces for play and work outdoors, it was just a really enjoyable job. As I worked there for a year I learned more about the career opportunities available in the turfgrass industry. That led me to enroll at Oregon State University the next year to study horticulture.

**ST:** Why did you start the Asian Turfgrass Center? Where does the name come from?

**WOODS:** After graduating from Oregon State University I had worked as a golf course superintendent in China and Japan before going to graduate school at Cornell. During that time working in Asia, I realized that this was a fun and dynamic part of the world, and as far as turfgrass goes, there wasn’t nearly as much research happening in Asia, nor as much provision of regionally specific turfgrass information, as I had seen in the USA. I thought there would be an opportunity to work on developing and then sharing turfgrass information in Asia. When I graduated from Cornell, I did that. I’d wanted to

call it the Asian Turfgrass Institute, but when I applied for that company name in Thailand I found out “institutes” are reserved for the government. So I called it ATC, the Asian Turfgrass Center.

**ST: What research are you doing currently that might affect turf maintenance practices in the future?**

**WOODS:** I'm trying to figure out a way to link the work done to the grass to the growth rate of the grass. I've been studying how much turfgrass grows and things that are related to that growth. For example, dormant turf isn't growing and uses no nutrients. Grass that grows rapidly uses a lot more nutrients. Things like organic matter accumulation in the soil, work required to maintain and improve a surface, these are all related to the rate the grass is growing. I've been studying this and I don't know exactly how it may affect turf maintenance practices, but I think it will somehow, because the growth rate is so fundamental to producing the desired surface for any sport.

**ST: What services you provide to clients?**

**WOODS:** ATC provides turfgrass information of various sorts. Sometimes this is related to grass selection for a project. Sometimes it is about how to adjust maintenance practices to improve surfaces. ATC has also conducted training programs. These services are all related to providing information that can help people have better grass. What I've described is quite broad in scope. To give some specific examples, we've advised on hotel lawns at Hong Kong Disneyland, conducted a multi-year educational program for the Indian Golf Union, worked with Kashima Soccer Stadium in Japan to prepare for the Olympics, and last year we provided testing services to clients in seven countries through our relationship with Brookside Laboratories.

**ST: Is there ever a “regular work week” for you? If so what's it like?**

**WOODS:** No. But if one would take a year's worth of work and then average it out, then it would be something like this. Three days spent traveling, visiting turfgrass sites, meeting turf managers and

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contractors and suppliers, and enjoying regional food. Carefully observing the grasses and climate, wherever I am. Half a day spent volunteering at a golf tournament. Half a day preparing to speak at a conference or seminar. Half an hour speaking at a seminar. Half a day writing articles and blog posts. One day reading, doing research, writing scripts in R software to do some type of data analysis. What does that come to? Five and a half days, a little more than that? That sounds about right for what a regular week would be if a year of work were allocated evenly across 52 weeks.

**ST: How do you keep current on turf-related research and best practices?**

**WOODS:** I read a lot. I subscribe to the RSS feeds for a number of websites and see when those sites are updated. I get email table of contents alerts for some relevant journals. I have some alerts set up in Google Scholar for new articles about certain topics, specific grass species, and for new articles by certain people. And I check the programs for a lot of turf conferences (both scientific and trade), even if I'm not attending, to see what the topics are. And people write to me to tell me something, or to ask about a topic, or I may be the one writing or calling to

request information. Those conversations are important.

**ST: What changes in turfgrass management do you foresee in the next decade?**

**WOODS:** I expect there will be a continuing trend to be more efficient in the work, using surface performance data to provide feedback that turf managers will use to adjust the maintenance practices. I've been thinking about turfgrass management in this way. For any location, there is a certain set of conditions one is trying to produce. And whatever conditions end up being produced, it took a quantifiable amount of work to produce them. One can then express the conditions produced, divided by the work performed, as a ratio. A larger ratio is better. One will try to either make the conditions better for the same amount of work, or keep conditions the same while doing less work. What I've just described is simultaneously obvious, abstract, and general, but that's the way I've been thinking about turf management and specifically about how turf managers will be evaluating changes in the work, and making improvements, in the future.

**ST: What are your passions and interests away from work?**

**WOODS:** I enjoy reading and I try to do as much of that as possible, although recently I've been reading a lot for work – science and statistics and programming things. I was a member of the Dickens Fellowship for a number of years and I've read all his novels. I've read a lot of Dostoevsky; in fact I took a Russian class as an undergraduate thinking I might try to read some in the original, but quickly disabused myself of that idea. I enjoy golf, skiing, hiking, and trail running. Last year I did a 38-km trail race in northern Thailand. I'm not especially proficient at any of those but I certainly enjoy them, especially when it's with family or friends. I've traveled a lot, and made friends in a lot of places. I enjoy spending time with them, and they've also introduced me to great food around the world. That's something I enjoy too, having a good meal wherever I happen to be. **/ST/**



Milton Hershey School, Derry (PA) Twp. Photo courtesy of Joe Barr

# “WHAT I WISHED I’D KNOWN”

**Editor’s note:** We asked some turf industry professionals and STMA members to answer one question – “What do you wish you’d known when you started your turf career?” Here are their responses:

COMING FROM Michigan State, they did a fantastic job in preparing us on what to expect from professional side of the industry and it has helped me tremendously up to this point in my career. What I wish I would have known more about is the time commitment that comes with working in this industry – it

will put a strain on your personal life. That includes seeing family, starting/maintaining a family (dating, girlfriend, wife, kids etc.) and taking care of your own physical and mental health. This is something that may be hard to teach in a class. But, nowadays we have ways of sharing how we manage our fields, but our personal life experiences within the industry as well. When we open up about those experiences, we learn that maybe we should delegate some workload now and then, maybe go see that doctor for a physical, or emphasize hav-

ing a date/family night to spend with your loved ones. Your quality of life outside the lines is just as important as the life between them.

- Tyler Lenz, Ryan Sanders Sports Turf,  
TCU Baseball

LIKELY THE ONE THING that I wish that I would have known is how critical field safety and measuring with a Clegg tool to ensure field safety is to keeping our athletes safe. Fortunately for me there were some very clear field standards that were available from ASTM

and the NFL, which served to support our findings and the remedial actions that were necessary to provide a compliant surface for our athletes.

- John Cogdill, City of Boulder, CO

I WISH I would have known how much I was going to enjoy being in the sports turf industry. I would have gotten into it much sooner. The people in this industry are the best of the best. They are not just professionals at what they do but they are genuinely good people. I wouldn't trade the relationships I have made for anything. Sports turf managers are people you can count on, on and off the field.

- Steve Bush, CSFM CFB, agronomist

- Managing turf grass is what I do, but it does not define who I am.
- When it comes to managing turf grass for other people, my opinion is irrelevant.
- Healthy work/life balance is vital.
- Grass is more forgiving than people are.
- Take care of the soil first; everything else will get better.
- Nature is a great equalizer.
- Do the little things well.

- Don Savard, CSFM, CGM, Salesianum School, Wilmington, DE

WHEN I FIRST started in this industry, there'd be jobs that I'd think were so important they couldn't wait until the following day, and I'd find myself staying until all jobs were completed. Therefore, I'd tell my younger self that those jobs really could've waited until morning; what can't wait are the moments with your kids. The key is determining when you really need to stay late and when you should be at home with your family. I saw a great quote on Twitter from football coach Gene Chizik: "There are three things you can never recover: one, words after you say them; two, occasions that you missed; and three, time when it's gone. Make every day great with your children." That second one really hits home in our industry when you think back on all the special occasions we've probably all missed out on due to our jobs.

- Brian F. Bornino, CSFM, Purdue University Athletics

**"THE PEOPLE IN THIS INDUSTRY ARE THE BEST OF THE BEST. THEY ARE NOT JUST PROFESSIONALS AT WHAT THEY DO BUT THEY ARE GENUINELY GOOD PEOPLE. I WOULDN'T TRADE THE RELATIONSHIPS I HAVE MADE FOR ANYTHING."**

- Steve Bush

WHAT I WISH I had known when I started my turf career? The importance and value of saying 'no' without having to justify my answer. To this day my inability to say no remains both my biggest personal weakness AND my biggest strength as I take great pleasure in doing what I can to assist someone. However, an inability to say no also means that one remains regularly involved in too many things and cannot give enough specific attention to items that deserve more focus.

There was no way I could say 'no' to your request, Eric.

- Dr. Mike Goatley, Virginia Tech

I WISH I had read leadership and management books earlier on in my career. It took 10 years and a mentor to guide me in the right direction. These books helped me to become more understanding of situations and how to more consistent in decision making and planning.

- David Nowakowski, CSFM, Harrell's



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College football national championship 2019 at Levi's Stadium in San Francisco. Photo by Greg Dunn and courtesy of West Coast Turf.

SURROUND YOURSELF with people that know more than you and have been in the industry longer. Don't be too proud to take advice from someone who has been in the industry longer.

One of my first bosses told me that if you never make a mistake you are not working hard enough. It is how you handle the mistake that defines you. When we all start out there will be mistakes and that's ok. It is how we overcome them that will determine if you will be successful in our industry or not.

Growth regulators are a game changer. I was nervous to use them when I first started managing athletic turf because I thought I would never get the growth to cover the bare areas on the fields. Boy, has

my opinion changed! They are an essential part of my program now.

- Allison Moyer, University of Richmond

IT'S FUNNY, I had this conversation with a good friend of mine in the industry a few weeks ago. We were talking about how much the technology of our profession has changed in the last 20-25 years with respects to all the equipment advancements, fertilizer differences, turf managers upping their cultural practices etc. But the one thing that I really said that I wish I had known when I was early in my career was how big of a network that there is within all Sports Turf Managers across the country, and even worldwide. And more specifically how

we are all here to help each other. There was a time early in my career where I was scared to reach out to other STMs on certain items to make sure I didn't sound incompetent or like an idiot or like I didn't know what the hell I was doing. Today I have a totally different frame of mind. We have all made mistakes, have had failures, and challenges that collectively have made us better STMs. With the ability to share these challenges together it has made us such a stronger industry. There is not a day that goes by that we can't pick up the phone, shoot an email, a text or visit one of our counterparts face to face and solve problems, share challenges and/or get another opinion on any issue. I think

it is so powerful and such an amazing tool that we have in our toolbox that as a young STM I wish I had used!

- Chris "Butter" Ball, CSFM,  
Turfce Athletics

I WISH I knew more about Turf. I had a background in Recreation and Forestry/Arboriculture. Taking the Superintendent Position was an eye opening experience but the Director took a chance on me and it was hitting the ground running a marathon for me. I was able to forge great relationships with other Turf professionals and took classes and went to numerous seminars. I read many books and industry magazines on turf and grounds maintenance. I still have a small library from many articles that I cut out from those early publications. I am now in my 29th year in my position with the City of Framingham. I look back and realize how lucky I have been to be in my position and realize how many things in our industry have changed and how many things still remain the same. It's all weather dependent.

- Chris McGinty,  
City of Framington, MA

THERE ARE SO MANY options for answering this question. Here are but a few that come to mind:

- Maintaining a good work-life balance is **not** detrimental to your work performance. You have to hit the 'refresh' key regularly or else your work performance **will** suffer, not to mention your health and home suffering. Naturally, there are those stretches when work has to take precedence for a period of time. Just make sure you identify in yourself when that has gone on too long and you need a diversion.

- Be prepared to take advantage of the unexpected opportunities along your career path. Careers rarely travel along a straight line. Continue developing soft skills that can apply to any career choice and don't be afraid to take a chance on a new direction if it interests you.

- Be the coordinator and the collaborator. Too often projects and/or processes go sideways because no one person is willing to bring the many factions and person-

**"BE PREPARED TO TAKE  
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- Don Scholl

alities involved in them together. Make yourself that person. Reach out to all levels and disciplines involved for their perspectives and to allow them to express their concerns. These discussions can be

eye opening for everyone and ultimately result in better outcomes.

- Learn how to read, interpret and manage a contract.

- Read the MOU, Personnel Rules and Regulations, and Administrative Orders.

- Develop strong relationships with the Finance Department, City Attorney's Office and Human Resources.

- As you advance in your career, defer credit to others whenever possible. Sure, you like to be acknowledged but there are so many contributors to your success that deserve as much or more credit. Make sure they get recognized.

- Continually remind your staff that every task, at every level, is important.

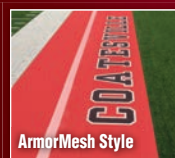
- Say 'Hello' to the custodians every time you see them.

- Remember the goal of what we are doing is creating positive experiences for both our external and internal customers.

- Don Scholl, CSFM, City of Tracy, CA

/ST/

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# Ticks

**W**e get it: No one wants to think about ticks. They're creepy, gross looking, and spread diseases. In the US, ticks are responsible for spreading potentially-life threatening infectious diseases, some of which can trigger not just chills, nausea, and a fever, but also neurological problems and even death. The most infamous of these infections is Lyme disease – according to the Centers for Disease Control (CDC), it's the most commonly reported vector-borne illness in the US. (A "vector" is any living thing that can transfer diseases.)

## Ticks are not insects

Ticks are actually arachnids, which means they're more closely related to spiders than they are to flies or mosquitos. Ticks even look a lot like spiders: They have four pairs of legs, no antennae, and, importantly, don't fly or jump, either. Instead, when ticks are ready to feed, they usually camp out on blades of grass or other foliage, where they wait for a human or animal to come to them. It's a strategy called "questing": By using their third and fourth pairs of legs for stability, they stretch out their first set of legs and latch onto the unsuspecting host; from there, some ticks might crawl around until they find a thin area of skin near a small blood vessel.

Scientists have identified thousands of tick species across the world, but only a handful or so really cause us trouble in the US. The blacklegged tick (or "deer tick") is infamous in the Northeast and parts of the Midwest because it spreads Lyme disease, an infection that can eventually cause joint pain, inflammation of the brain, and more. The Rocky Mountain woodtick is another dangerous critter that gets its name from its natural habitat; it, along with the American dog tick and brown dog tick (both found across the country) can infect people with

a potentially fatal disease called Rocky Mountain spotted fever.

Since some ticks are relatively small (the larva can be smaller than a millimeter), there's a good chance you won't notice one's on you. The tick burrows its creepy little head into your skin, unpacks its feeding tube, and spits out a cocktail of blood-thinning, skin-numbing, human-immune-system-fighting saliva. Then it'll likely feed for about 2 to 3 days, and, if it's a female, can swell up to nearly in double its normal size. Transmission rates vary by the disease and the tick, but in general, it's not instantaneous. In fact, the CDC says that if you can remove a tick within 24 hours, your chances of getting Lyme disease are pretty low.

## Use tweezers

You'll find all sorts of home remedies on the Internet but there's little proof any of them actually work. People recommend rubbing petroleum jelly, gasoline, nail polish, or 70% isopropyl alcohol over the tick's mouthparts, ostensibly to "suffocate" it. Problem is, say researchers, ticks can survive long periods without air.

If you deal with ticks by freaking out and yanking it off of you as fast as you can, that's a bad idea. Find a good pair of pointy tweezers and grasp the part of the sucker that's as close to the skin as possible; its mouthpiece is literally inside your skin. Then, pull upward carefully and steadily and either flush it down the toilet or, if you or your doctor want to ID it, put it in a sealed bag. If you don't remove the entire head, don't worry; the tick itself is dead, and the mouthpiece will usually work its way out of your skin eventually. Just be sure



to clean that area of your skin with soap and water or an alcohol wipe afterward.

Most of these diseases can trigger a fever, headache, fatigue, and muscle aches; some also trigger a telltale rash. People who develop Rocky Mountain spotted fever usually have the fever part first: the small, flat, pink rash tends to show up 2 to 5 days later. With Lyme disease, the infamous rash (it looks like a bulls-eye and gradually radiates outward) might appear anywhere from 3 days to 1 month after the bite, and it usually arrives before the fever.

Although ticks don't exactly have an off-season, the summer is peak Lyme disease season in the Northeast. But the deer tick is also active year-round, including the winter, as long as the temperatures are above freezing.

If you spot a tick fast enough, the worst thing it'll do is creep you out. One of the best ways to spot one is by checking your skin, particularly your scalp, belly button, armpits, ears, the back of your knees, and between your legs. The 2014 review in the recommends scanning yourself every two to three hours, even if you're still outdoors. And remember, some of these bugs can be really small, so if you've just finished a hike and notice, say, a new freckle on your arm, it's worth a second glance. **/ST/**

**EDITOR'S NOTE:** Our "Personal Rootzone" series to call attention to personal health issues continues this month with a look at ticks. Most of this information comes from [www.health.com](http://www.health.com), a part of the Meredith Health Group.





# JOHN MASCARO'S PHOTO QUIZ

JOHN MASCARO IS PRESIDENT OF TURF-TEC INTERNATIONAL



ANSWERS FROM PAGE 17



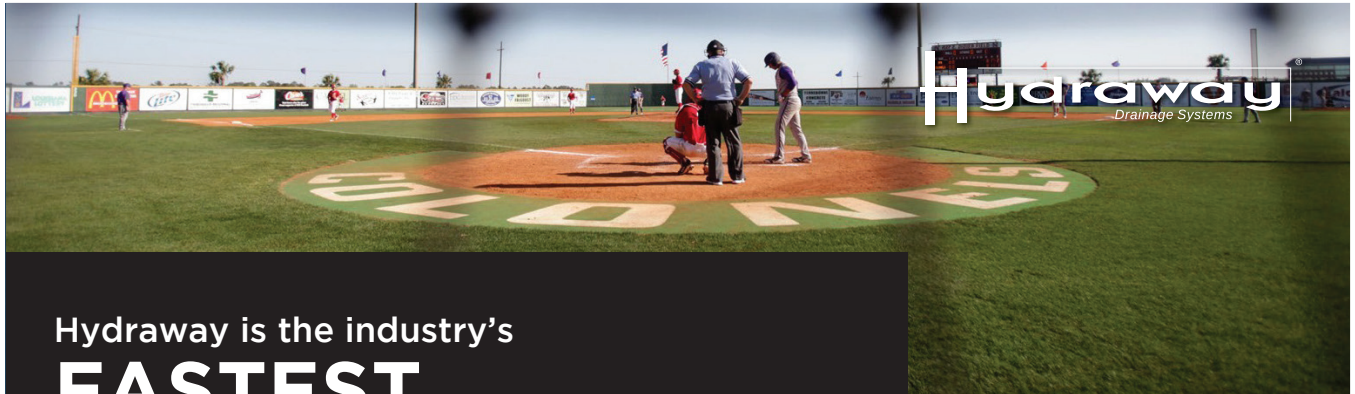
This multipurpose synthetic turf field is entirely green with the exception of an inlaid school logo in the corner area, where the field entrance is located. The Sports Turf Manager paints various colored lines in the field, with removable paint, for different sports. The painted line on this multipurpose is void of paint in a strange shape due to the Sports Turf Manager's painting over a mouse that had given up the will to live any longer. As anyone knows who paints lines, once you pull a string, you want to keep your head down and walk steady and paint. Many times you are so concentrated on getting a straight line that you might paint over small objects, like leaves. Since this event occurred in the fall, while he was painting he thought to himself as he painted over a small object, "was that a mouse?" As you can see from the photo, the answer was,



yes. The mouse was gently removed, and the area was touched up so the shape could no longer be seen.

*Photo submitted by Matt Tobin from Pioneer Athletics. Photo and story submitted by Peter Thibeault CSFM, Sports Turf Manager at Noble and Greenough School in Dedham, MA.*

If you would like to submit a photograph for John Mascaro's Photo Quiz please send it to John Mascaro, 1471 Capital Circle NW, Ste #13, Tallahassee, FL 32303 call (850) 580-4026 or email to john@turf-tec.com. If your photograph is selected, you will receive full credit. All photos submitted will become property of SportsTurf magazine and the Sports Turf Managers Association.



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Seth Thibodeaux, Head Baseball Coach Nicholls State University

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# An update on alternative infills

// By MARY HELEN SPRECHER

The problem with the infill controversy is it won't go away. And in the meantime, many synthetic fields are hitting the end of their life expectancy and need to be replaced.

So what are the options? First, know the facts. The Synthetic Turf Council (STC), which compiles information on studies regarding synthetic fields, notes, "More than 50 independent and credible studies from groups such as the US Consumer Product Safety Commission, and statewide governmental agencies such as the New York State Department of Environmental Conservation, New York State Department of Health and the California Environmental Protection Agency, have validated the safety of synthetic turf."

The STC has further noted that no study to date shown elevated health risks associated with synthetic turf or its components, and no research has found any possible link between synthetic turf and cancer.

However, that does not mean there are no drawbacks. According to Adam Coleman of US Greentech, "There are still several unsolved issues with crumb rubber: it retains heat, it smells strongly of rubber when hot, and over time, it can change texture, creating a firmer surface."

And as a result, the industry has come up with some alternatives. A partial list follows. Some of these products are proprietary, meaning they are copyrighted; others are available on the common market. Information on specific infills can be obtained from manufacturers, builders and design professionals.

■ **Green-Coated SBR Crumb Rubber:** This infill encapsulates crumb rubber in a combination of polymers, pigments and anti-microbial substances.

■ **Coolplay V2:** This is an extruded blend of polymers and cork that replaces the top layer of crumb rubber. It is combined with other materials as well.

■ **Envirofill:** This product uses a rounded quartz core that is coated with a polymer and permanently infused with anti-microbial technology



*Beechwood (OH) High School. Photo courtesy of American Sports Builders Association (image not meant to represent any of the products noted in this article).*

■ **Safeshell:** This infill uses a blend of ground shells from English and black walnuts. The shells are treated to remove any residual allergens and rounded to reduce abrasion.

■ **Granulated Cork:** These are made of a sand ballast topped with 100 percent cork derived from cork trees.

■ **Ecomax:** This uses an extruded composite of recycled turf and thermoplastic elastomer (TPE).

■ **Zeofill:** This is a 97.6% pure Clinoptilolite zeolite, a product based on volcano ash that became rock that was later dissolved by groundwater. It has seen popular use in dog parks and playgrounds, as well as fields.

■ **Nike Grind:** Another proprietary product, this is made from the rubber sole of used and recycled running shoes.

■ **Organic (Fiber-Based):** This is a field that includes infill made out of various combinations of coconut husks, peat and rice husks.

■ **TPE:** Thermoplastic Elastomer): TPEs are virgin polymer pellets that are typically uniform and resemble the feeling of a crumb rubber field.

Again, these are a few of the alternatives out there. Others are available, and due to the increased demand, plenty more are in development.

The use of alternative infill is growing in popularity. If you're investigating these infills, it's essential to do as much research as you can, not just on the product but also on its suitability to your installation. Questions you should ask include:

■ How long has this infill been around?  
 ■ Does it comply with industry safety standards?

■ Is it made in a way that has a negative impact on the environment?

■ What is the average cost for a field that uses this infill?

■ How readily available is it? Can it be ordered easily?



Lakeside Field, Northwestern University. Photo courtesy of American Sports Builders Association (image not meant to represent any of the products noted in this article).

■ What contractors in my area are familiar with this infill and able to install it?

■ Do contractors in my area recommend this product? Why or why not?

■ What is the warranty on this product? What is and is not covered? Who will address any problems?

■ What pile height is recommended if this infill is to be used?

■ Does it require a shockpad? (Many fields do, but you should ask since this can affect the total cost.)

■ Where does the infill come from? If it is coming from a great distance, do shipping costs figure into my final installation?

■ Is it being shipped from a country that has effective quality assurance/quality control measures?

■ How much maintenance does a field with this infill need on a daily, weekly, monthly, etc. basis? Is there any kind of maintenance or care that differs from that of other fields?

■ What specific type of equipment (including irrigation methods) will be needed to maintain it?

■ What can I expect from this infill? For example: what can I expect over the first few

weeks or months? Will there be migration of infill? Will it pack down over time and become firmer? How long will that take? How often does it need irrigation? Will this field look, feel or smell any different to my athletes?

■ Does it hold heat?

■ Is this product recommended for my geographic area?

■ How well can it handle heavy rains? How about repeated freeze/thaw cycles?

■ Will this product hold up to the type of use I expect it to get? Is there any type of activity that is not recommended or a season in which it should not be used, given my weather?

■ What is the protocol for end-of-life for this product? Can it be reused? Can it be recycled? Can it be composted? How should it be disposed of? Who do I call?

It might sound like a lot of questions, but you'll want to ask them all; in fact, you'll probably think of more in the course of your research. After all, you wouldn't make any other major investment without a lot of forethought.

A few other pointers to keep in mind; you have likely heard them before, but they're worth repeating.

Many new infills are more expensive than crumb rubber; this is the case with many newer products in almost any market. You'll want to know, of course, whether a next-generation field is going to fit your budget.

In addition, many of the new infills on the market currently lack long-range performance data. This type of data may be available soon, however, since manufacturers of various infills are interested in providing prospective owners with all available information.

Find out if others in your area, such as athletic directors, field managers or sportsplex administrators have experience with fields with alternative infill. Get their feedback and recommendations. In particular, you'll want to speak to those whose weather and use conditions are similar to yours so that you have a better idea of what to expect. The information you can get from your colleagues is critical to making informed decisions.

Seek advice from a design professional and/or a professional sports contractor; be sure to find a person with extensive experience in sports fields. The American Sports Builders Association, for example, has a directory of design professionals, as well as a voluntary Certified Field Builder (CFB) program.

So, given the options, is there any recommendation as to the right infill? As always, the right field is what is right to the buyer, the athletes who use it and those who maintain it. And – we might as well admit it – to the public as well, since their concerns need to be taken into account as well. **IST/**

*Mary Helen Sprecher is a freelance writer who wrote this for The American Sports Builders Association, a non-profit association helping designers, builders, owners, operators and users understand quality sports facility construction. The ASBA sponsors informative meetings and publishes newsletters, books (including Sports Fields: A Construction and Maintenance Manual). It also offers its voluntary Certified Field Builder program. Available at no charge is a listing of all publications offered by the Association, as well as the ASBA's Membership Directory, www.sportsbuilders.org*

# The Appelfeller Report, Part I



Artist's rendering of the new soccer stadium being built in Austin, TX

*Editor's note: This is the first in a series of articles we'll be running over the next 2 years, following the progress of building a new soccer pitch for the AustinFC franchise that will begin play in 2021. Weston Appelfeller, CSFM, former STMA Board member and an informal international ambassador, was hired by the club late last year to oversee the planning and design of the new surface (hopefully starting a trend of owners' hiring an expert at the beginning of a project!). Weston will share his experiences as the process plays out; here we offer his backstory as way of introduction:*

**I**n 2014, while working for the Columbus Crew Soccer Club, I was presented an opportunity to take on more responsibility. At that time, I accepted a promotion to be one of three people that would oversee our stadium and answer directly to the Club's president. My job title would stay the same, but my role within the organization would change to a more senior level. This would provide me a seat at the table for when organizational goals,

budgets, and objectives would be developed.

Looking back at my career prior to this point, it would show that my foundation was built learning from the leaders that I had worked for at the Boston Red Sox, Philadelphia Union, The Ohio State University, and those that came before me with The Crew. I felt I was ready for the promotion and I accepted.

Fast forward to June 2017. While in Palm Springs for an STMA Board of Directors meeting, a message was delivered that would reshape my career. An organizational developer named Dr. Jeff Suderman was helping the Board develop goals for our strategic plan and he talked about a theory called the Sigmoid Curve. This is a method successful businesses use in redevelopment. Essentially a well-run business will work through an initial period of struggle, then see growth. After seeing growth for a period, they will plateau and eventually decline. A successful organization knows they need to reinvent themselves and start over, just before they plateau.

This method stuck with me over the next year. The more I thought about it, the more I felt I had reached my plateau and felt my growth as a turf manager was going to decline if I didn't take the next step.

At the end of 2018, I was presented the opportunity to leave my position with the team in Columbus and work for the new Major League Soccer team that is coming to Austin, TX and will start play in 2021. Taking this opportunity would take me out of the traditional role of the sports turf manager, (e.g., mowing, fertilizing, painting, etc.) and take me into a planning and design role for the next 2 years.

This was an extremely tough decision for me as I had grown up with Crew SC. The Club had given me my first opportunity in the industry and had provided me with a staff of very professional groundskeepers that I consider family. Ohio is also my home. My kids were being raised within 5 miles of all their grandparents. I had a very tough decision to make.



Weston Appelfeller, CSFM

As I tried to choose if I should stay in Columbus or move to Austin, my wife of 13 years became my biggest motivation for deciding. She knew that I was ready to make a change to something that was a bigger challenge and helped ease my mind as to what I should do. In one of our late-night discussions, I remember her asking me why I felt this was the opportunity I needed to take. My answer to her defined why we would move 1,200 miles from our hometown and family.

That night I explained that with this move I hoped to help change the narrative that has been written too many times. A team designs a new stadium, builds a field, purchases equipment, then hires a groundskeeper. The groundskeeper shows up to work and is handed the keys to what looks to be a state-of-the-art field, only to find out that corners were cut, and money was saved at the expense of the groundskeeper. Austin FC offered me the chance to help design, develop, and build a high-quality asset for the club. Like the opportunity in 2014, I would not pass this up.

As I write this article, I'm now 4 months into my new role. I'm still living in Ohio and traveling to Texas each week for work. I work for a Club that has allowed my family and I to operate on this schedule until my kids can finish the school year. At that point we will officially become Texans.

I often get the question, "What are you working on if you're not mowing grass?" The answer to that is complicated. I spend my days researching, visiting stadiums, training facilities, sod farms, and universities. I talk multiple times a day with our Vice President of Stadium Op-

erations as we work to provide a pitch that's both sustainable and profitable. I talk each day about artificial lighting, bermudagrass, paspalum, equipment and drainage with our field designer and other professionals throughout the world, and moving forward, with you.

I'm excited to have this opportunity, and I look forward to sharing the updates and progress every few months with the

*SportsTurf* Magazine community. I'll share on how our large roof impacts our decisions on our field system, how developing relationships with vendors is paramount to us having success, and how we'll build our staff as we begin to operate in 2021. This is truly the most rewarding work I've done in my career, and I look forward to letting you in on the experience. **/ST/**



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# New Mellor book coming in June

**“D**ave Mellor has built one of baseball’s most inspirational stories over the last half-century. Anchored by a love for his family and the game, he survived incomprehensible catastrophes and PTSD to become a pioneering ballfield artist and head groundskeeper for Fenway Park.”—Buster Olney, ESPN

Baseball and PTSD aren’t often mentioned in the same sentence. But then again, the experiences of David Mellor, the head groundskeeper for the Boston Red Sox, aren’t typical of someone in the big leagues. “One Base at a Time: How I Survived PTSD and Found My Field of Dreams” by STMA member Mellor will be released next month. Mellor shares with readers not just a compelling chronicle of his traumatic experiences, but also first-person insights on the importance of finding help to overcome the worst of what life throws at you.

“If I had read a book like this 30 years ago, my life would have been different,” Mellor said.

In 1981, Mellor suffered a freak accident when a car pinned the then-18-year-old against a wall outside a McDonald’s, tearing up his knee and ending the pitching prospect’s big-league hopes. Even more shocking, in 1995, Mellor was working on the field as a groundskeeper for the Milwaukee Brewers when a driver with a history of mental illness busted her car through a security gate and ran him down on the warning track.

These and many other traumas and dozens of surgeries recounted by Mellor left him physically and psychologically scarred for decades, and triggered in him a malady that wouldn’t be diagnosed for decades: post-traumatic stress disorder, or PTSD. Mellor suffered mood swings, irritability, restlessness, extreme sensitivity, screaming nightmares and more. Mellor said he felt ashamed as he was



***“To all who suffer from PTSD, know this: In spite of it all, today, against all odds, I am making progress and you can, too.”***

struggle through PTSD in the days before his diagnosis: “I assumed that I was just weak and wondered why it was that I couldn’t handle everything and move on.”

Then, by chance, Mellor read a magazine feature on PTSD. He instantly recognized his own condition in the description. He said, “I started ticking off the symptoms that had haunted me for almost 30 years. Involuntary trembling? Sometimes. Irritability? Often. Restlessness? Yes. Depression? Absolutely. Nightmares? Always. Insomnia? Definitely. Emotional numbness? Yes. Sensitivity to noise? Yes! A tendency to seek relief in alcohol? I had!”

Mellor said, “I had always thought PTSD was a condition only soldiers who had dealt with the horrors of war could have, but today we understand that PTSD can be caused by all sorts of trauma, from warfare to assault, from sexual abuse to being in a car accident. I went nearly three decades before I made the connection between my symptoms and PTSD.

“My hope is that this book helps people heal, people I may never even know personally.”

Mellor explained, “I wrote this book so others won’t suffer as long as I did, and those around them won’t suffer either. I want this book to be the start of a life-changing journey of healing for those who are suffering from PTSD. There is help out there.”

“To all who suffer from PTSD, know this: In spite of it all, today, against all odds, I am making progress and you can, too.”

A key part of Mellor’s recovery, which he discusses in his book, came about thanks to the introduction of his service dog, Drago, into his life—a story featured on ESPN.

“Drago has had a powerful and life-changing impact on me,” Mellor said. “He is always by my side, on and off the field.”

Mellor concluded, “I will continue to take the same approach that has carried me this far: One step at a time; one base at a time. It is never too late to take that first step.”

## Autonomous robot creator expanding in USA

Intelligent Marking, creator of the first autonomous robots for GPS line marking on sports fields, recently expanded its US subsidiary in Georgia with a dozen new sales and support staff.

"We are now positioned to rapidly grow and support our robotic sports turf line marking solution and dominate the US marketplace in 2019 and beyond with this new strategically placed sales force and product support team," said Jason Aldridge, President, Intelligent Marking USA, Inc. "We're excited about having an existing customer base, which has already proven their labor improvements and cost savings, in combination with a newly formed sales structure and support staff, all within no more than a 4-hour drive from any prospect in the nation."

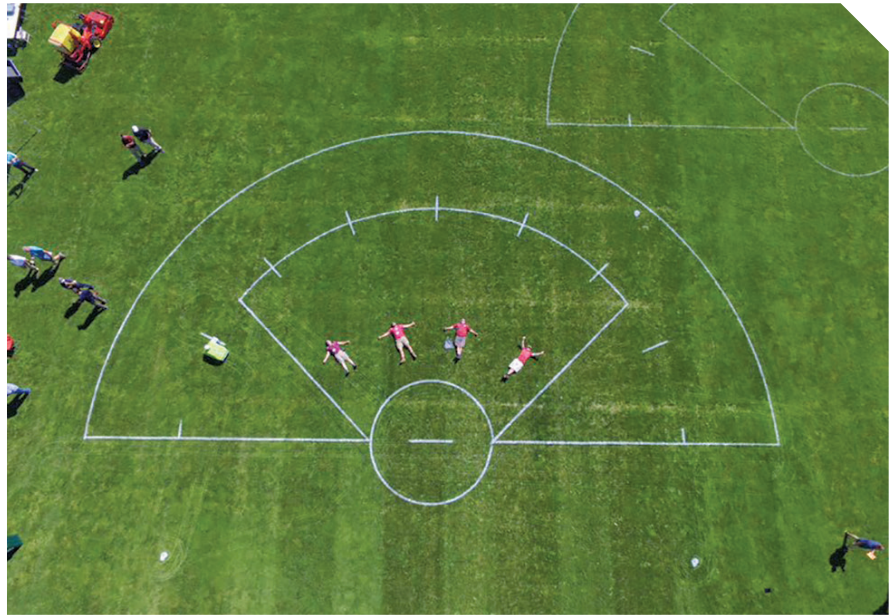
The Intelligent One Robot has become a hot topic since first being introduced to the US market in 2017 by Turf Tank, the Aldridge-led company that experienced 1,200% growth in 2018.

### What's new

Intelligent One Robot is now programmed to paint more than 45 different field types or shapes, the most common being American football, soccer, lacrosse, field hockey, rugby, ultimate Frisbee, flag football, baseball, softball, running tracks and field events.

The robot gives the operator a choice of speed settings up to 2.25 mpg for any field so that professional grade fields with tight cut grass can be painted at a slower speed for perfected, professional lines and more common sports fields can be painted faster speed, in as little as 20 minutes.

You control the robot with an Android tablet with an included data plan that makes it easy to handle all aspects of the autonomous line marking process, upload software updates and receive immediate remote support access. The package comes with two interchangeable, hot-swappable lithium-ion batteries with a capacity 4 hours of operation for each charge. The



robot is powered by two newly designed wheels, individually powered brushless motors that can handle the most perfect or uneven surfaces.

The system employs the patented RTK-GNSS system with a localized base station using GPS, GLONASS and COMPASS satellites, which delivers a positioning accuracy of +/- 1cm. The Intelligent One Robot has an interchangeable nozzle throughput configuration, adjustable line width and height as well as screen plates with automatic lifting function to ensure precise and crisp lines. It has certified paint options in any color for natural grass or synthetic turf surfaces. These paints come as a ready to spray or concentrate-based supply; the robot has up to a 6-gallon paint capacity, allowing the operator to mark the equivalent of two full size 11 v 11 soccer fields without changing out the paint container.

The manufacturer's suggested retail price for the robot is \$49,999, and based on prior experience with customers, the return on investment is 12 to 18 months. Companies, organizations and local authorities can also choose to rent the robot solution for less than \$899 per month.

### Users say . . .

"Every year new tools and products come to the sports turf market that bring incremental benefits and improvements in turf quality and field management. Seldom do we see game changing solutions to old problems. However, the Intelligent One Robot is one such game-changer, which I believe will revolutionize sports field management and pave the way for additional automated technology in this industry." - *Brian Boesch, manager, turfgrass and athletic grounds, University of Rhode Island*

"Game presentation is one of the most important features of a game day experience for a fan, and the addition of Turf Tank offers our league access to cutting-edge technology that will ensure its field markings are looking sharp for every game of the season. We are looking forward to the extent of capabilities and solutions that come from this partnership and are thrilled to bring on a company that can positively impact the way our clubs are perceived by fans both at venues or watching the league's broadcasts." - *Jake Edwards, president, United Soccer League*

“Raymond James Stadium got ‘#TurfTanked’ the first time today for the Team USA soccer match. This is the coolest robot ever. Every sports field manager should have one!” - Wayne Ward, turf and grounds Manager at Tampa Sports Authority

“The Turf Tank Intelligent One Robot will change the sports field line marking industry forever. Our two purchased robots allow our sports turf crews to finish their regular assignments and special projects that we would not be able to complete in the past during the same time period. We believe this is the future of our industry and recommend the robot without hesitation.” - Geoff Sanders, sports turf manager, Baton Rouge Parks and Recreation

## GrassMaster hybrid grass system by Tarkett Sports

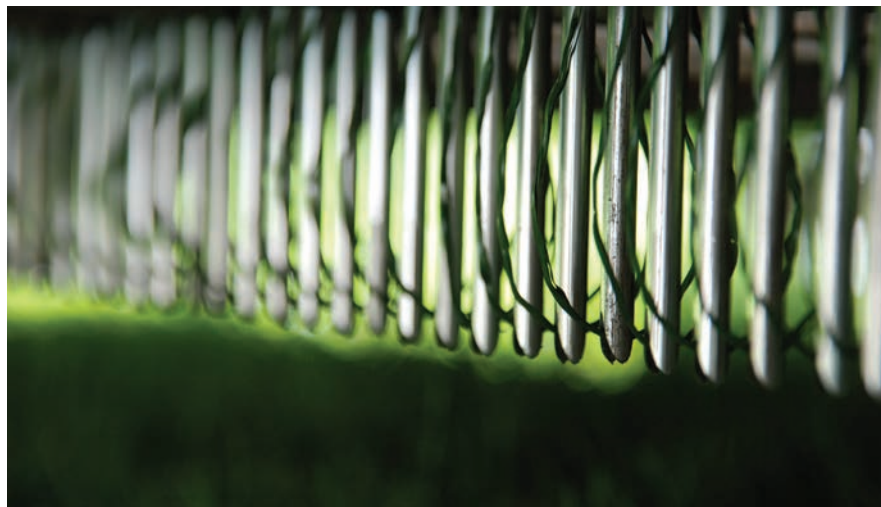
An unstable surface is often caused by grass roots. Within the playing season, sometimes the temperature drops or rises out of the average range, causing surface instability and divots.

In a regular season, stadiums located in the middle and northern parts of Europe have mild temperatures. With today’s disrupted climate, the weather is unpredictable, and temperatures suddenly shift.

A few chilly nights or hot summer days are enough to cause the natural grass roots

to shrink and weaken; that means the surface easily breaks under pressure, producing divots. An unstable surface increases the chances of player injuries and can even lead to tournament cancellation. Grass roots grow and recover under the right weather conditions. However, outside the ideal solar radiation levels and temperatures, climatic pressure causes grass roots to shrink. This leads to a deterioration in the roots’ ability to stabilize the soil and causes a reduction in traction, stability and player safety. After a few days of extreme hot or cold temperatures, the grass turns yellow due to lack of moisture and the leaf starts to fall. After several days, the grass roots die.

GrassMaster hybrid grass system solves this problem by reinforcing the grass’s roots. GrassMaster’s polypropylene fibers are stitched into the subbase, then the pitch is seeded. Gradually, the natural grass starts twisting and crawling around the fibers to form a 100% natural grass surface. A second method consists of seeding the pitch first, up to two weeks before stitching. Alternatively, if time constraints are important, GrassMaster fibers can also be stitched into sods. This way, the pitch can be ready within a few days. The patented, high-performance GrassMaster fibers support the grass’s roots, stabilizing the surface. They create a firm and even surface that prevents the creation of divots. The pitch then becomes optimal for ball roll and bounce, thus enhancing the players’ performance. Risk of injuries is reduced when players slide, turn and jump. - Fabio Travaini, Director & Product Development Manager, Tarkett Sports GrassMaster Solutions



## PRODUCTS



### TURFSMITH APPAREL BRINGS AWARENESS TO TURF PROS

Turfsmith is an apparel brand. Currently they have two hoodie designs, one with 11 color options and one with seven color options in sizes from Small to 5XL, eight different embroidered hat options ranging from trucker hats to beanies. There is also have a variety of short sleeve and long sleeve t-shirts with unique and custom designs only available at turfsmith.com. Many more items and designs are planned for 2019. It is an online store located at turfsmith.com. Through Turfsmith, there is an opportunity for turf professionals as well as professional athletes to show their appreciation for the groundsman and women by purchasing and wearing the brand to show their sense of community. A portion of profits from every Turfsmith item sold will be donated to causes that support the profession.



### TURFCO’S CR-15 LARGE AREA TOPDRESSER

Designed to be a multi-purpose workhorse, the CR-15 gives users access to precision spread application controls for large-area turf management jobs. Turfco equips the CR-15 with a digital smart controller that gives you the ability to calculate their preferred rates and then lock-in



rates and widths into four savable pre-sets. For efficiency while in use, the equipment operator can switch between the various pre-sets on the fly, varying the spread rate and width for different areas, for example. This allows the operator to move from wide to narrower areas and still maintain the same application rate, improving productivity without wasting material. The edge-to-edge spread capability of the CR-15 allows operators to lay down their spreads evenly and with pinpoint accuracy as they move over the turf. The CR-15's advanced hydraulics and spinner design allow for uniform application, with edge-to-edge spreads at any desired width and rate within a 15 to 45 foot range.



### SELF-PROPELLED TOPDRESSER FROM EARTH & TURF

Earth & Turf Products, LLC, announces its Model 60SP, an economical, very maneuverable, self-propelled topdresser, ideal for spreading dry or wet compost and sand, plus a variety of other materials. It features easy loading into its 6.7 cu. ft. hopper. Maximum load weight is 650 Lbs. Optional loading chutes will increase capacity for lighter materials such as compost. A widespread beater produces an even spread pattern up to 42 inches wide. The 60SP is powered by a 190 cc Briggs & Stratton, 875 series, 6.5-hp engine. Drive is by CV belt, forward and reverse. This extremely economical self-propelled topdresser is the latest example of Simple, Well-built Products from Earth & Turf Products, LLC.

### WATCHDOG WIRELESS RAIN+TEMP STATION

Spectrum Technologies, Inc., brings wireless sensor technology with the WatchDog Wireless Rain+Temp Station. Real-time, site-specific data provides accurate rainfall and temperature data in order to create consistent playing conditions. Current weather conditions are viewed on the cloud or Smartphone. Rain events can have a



significant impact on irrigation scheduling and turf management. It rained last night. Where and how much did it rain? How will this alter my irrigation schedules? Site-specific rainfall and temperature data is useful for tracking turf disease and insect pressure. Placing a WatchDog Wireless Rain+Temp Station in multiple microclimates can result in more effective decisions.



### TORO TOPDRESSER 1800

The compact Toro Topdresser 1800 mounts to a utility vehicle, and provides topdressing speed of up to 8 mph. The remote on-off application lever allows precise control from the operator's compartment, and makes quick work of any topdressing job. With an 18 cubic foot, all-steel hopper, operators can minimize refill stops and increase productivity. This, coupled with the 60 inches working width ensures a quality spread every time.

### IMPROVED CAMP CHAIR

The seat of the average camp chair is usually a magnet for crumbs, sand and dirt. People are constantly brushing off the seat every time they go to sit in the chair. And many of the chair designs are not only uncomfortable, they also sit hot meaning you end up with sweat rolling down your back and legs if you sit for too long. CGear Sand-Free is introducing a new camp chair that is crafted from a combination of canvas and CGear's patented Sandlite fabric that filters sand, dirt and dust



through the chair to the ground. The compact chair collapses into a small, convenient carry case, weighs less than two pounds and the chair feet are designed to keep it from sinking into sand or loose dirt, so you don't end up sitting on the ground. Plus, the open weave fabric increases airflow to your backside reducing sweat.



### CHEVRON FUEL TREATMENT FOR SMALL ENGINES

Chevron Products Company announced the retail rollout of its new Techron Protection Plus Powersports & Small Engine Fuel System Treatment. Techron Powersports & Small Engine restores power and performance while optimizing fuel efficiency as it cleans fuel injectors, combustion chambers, throttle bodies and carburetors. The additive's performance detergents minimize cold-start problems and deposit-related knock and ping by removing carbon deposits in the combustion chamber; dissolves and prevents intake-valve deposits for smoother idling and enhanced throttle response; and cleans and controls gum and varnish build-up in the fuel system. For maximum effectiveness, Techron Powersports & Small Engine begins to clean up the fuel system and engine with the first application and then keeps it clean as the equipment or vehicle is fueled up, re-treated and operated.



► FIELD

# CAPTAINS PARK

## CHRISTOPHER NEWPORT UNIVERSITY

► LOCATION

Newport News, VA

► **Category of Submission:** College Softball  
 ► **Sports Turf Manager:** Chris Webb  
 ► **Education:** BS in Crop and Soil Environmental Science, Virginia Tech  
 ► **Title:** Assistant Director of Grounds  
 ► **Experience:** While I was studying at Virginia Tech, I spent two summers as an intern with Larry DiVito at the Washington Nationals. I was able gain experience at RFK Stadium and be part of the transition from MLB to MLS while the Nationals shared the stadium with DC United. I was able to follow that up and be a part of the inaugural season at Nationals Park. After graduating, I spent 3 years working in commercial grounds management before coming to Christopher Newport University as the Assistant Director of Grounds. I returned to my roots of sports turf management in 2016 when we took over the management of the athletic fields in addition to our campus grounds.

► **Full-time staff:** Dean Whitehead, Director of Grounds; Matthew Yarborough, Athletic Field Technician  
 ► **Part-time staff:** Thomas Roberson, Student Worker; Trevor Fletcher, Student Worker; Kent Watkins, P/T Groundskeeper  
 ► **Original construction:** 2005  
 ► **Turfgrass:** The field is primarily Tifway 419. We began using TifTuf bermuda for any repairs in starting in 2017. We have found that TifTuf blends well with our existing 419 and is much more wear tolerant. We have not had to replace any wear areas once TifTuf has established in those areas.  
 ► **Rootzone:** 88.4% sand, 6.8% silt, 4.8% clay  
 ► **Overseed:** We overseed at a rate of about 500 lbs. per acre by the end of the fall season. We typically will hold off on our overseeding until fall practices are over to minimize the need to reseed due to wear and to give the bermuda as much competition free time to grow as possible. We will apply a

The Field of the Year Awards program is made possible by the support of sponsors Carolina Green Corp., Hunter Industries, Precision Laboratories, and World Class Athletic Services.



PGR to the bermuda before we overseed and then solid tine aerate on 2x2 spacing and run a Lely thatcher over the field to open up the canopy. After cleanup we go out with an initial rate of around 350-400 lbs. per acre. We always go two directions when we seed and then we use a GreensGroomer to drag in the seed. We spot seed weak areas once the seed is up or been taken out by wear. We do not have a particular variety of PR that we are loyal too. Since we are a government agency we have to put out an annual bid for all of our ryegrass needs and we specify that the seed must contain at least two varieties that are listed on the Virginia Tech NTEP recommendation list.

► **Drainage:** No drainage system

### Why should STMA consider your field a winner?

Welcome to Captains Park! Our campus grounds operations took over Captains Park in 2016. With that transition we inherited 14 acres of athletics fields, 1 full and 2 part time positions, almost no equipment, and 3-4 inches of thatch.

When we took over the softball we were ill equipped, with no money to purchase new equipment. We were honest with our administration about our equipment needs to manage the issues with our fields. Our administration was able to find year-end funding to purchase an off lease reel mower. We took it one step further and reached out to some of our partners in the community and were able to get donations to help fund a large aerator so that we can now aerate our field more often and more efficiently than ever before.

We built our agronomic plan with our thatch issue in mind. After we spray out our ryegrass in the spring we have a vendor verticut with a Koro Field Top Maker. This creates deep, wide channels that we then topdress aggressively into. We follow up with another sand topdressing in August before our athletes return to camp. At a minimum we solid tine aerate once a



month. We core aerate one time during the summer once the field has recovered from the verticutting and we remove the cores. We utilize an infiltration surfactant to help push moisture through the thatch layer during the season. Before we implemented these parts of our agronomic plan, a simple 1/4" rain event could turn the field into a swamp. Now we are able to keep the field firm, playable, and in great shape despite our major thatch problems.

As a state university in the Chesapeake Bay Watershed, we are restricted from applying any phosphorus unless we have a soil test showing a deficiency. Since taking over in 2016 we have not applied any phosphorus to the field. We did however notice a need to incorporate a micronutrient package into our agronomic plan. To find something that worked within our budget and our needs we partnered with a local company to create our own blend, Hydra CNU. This has allowed us to have one organic product that meets our needs for plant health, microbial thatch management, and nutrient retention.

This was a tough winter in Virginia for winterkill of bermudagrass. While other fields were ravaged, our softball field had almost no winterkill. We hope that we can serve as an inspiration that if you have patience, work hard, and believe in

the power of agronomics that you can deliver a great field for your community.

***SportsTurf: What's your background? How did you get into sports turf management?***

**WEBB:** While I was studying Crop and Soil Environmental Sciences at Virginia Tech I had the opportunity to work with Larry DiVito at the Washington Nationals for two summers at RFK Stadium and Nationals Park. My love for sports turf came into existence there but I wound up in professional grounds management for 8 years before our Grounds Department at Christopher Newport University took over the maintenance of our athletic fields in 2016.

***ST: What are your biggest challenges in providing excellent playing surfaces at the small college level? And how do you approach those challenges?***

**WEBB:** Our biggest challenge is resources, both staff and equipment. We have one full-time employee for almost 15 acres of athletic fields. We supplement him with around 100 hours of part-time help each week in season. When we took over the fields in 2016 there was almost no equipment and



a lot of our leasing budget is tied up in equipment that is ill suited for athletic field maintenance. We found a great deal on an off-lease reel mower and have plans to buy another reel mower in the next 2 years. We also plan to purchase a new sweeper and larger topdresser as well. Being a small college, we do not have the fiscal means to buy or lease everything we need in the short term. To help overcome this challenge we have identified and reached out to some of our key vendors on campus. We shared this with them and they have partnered with us to give money over 5 years to help bridge the gap on our equipment needs. Those funds helped purchase a Toro ProCore 1298 last year. We use equipment and staff from our campus grounds operations as needed and have filled in the remaining gaps over the past few years by having a contractor perform our aeration, verticutting, and some of our topdressing. As we add equipment like the ProCore the money we were spending on a contractor is now able to go toward other equipment or field needs such as topdressing sand.

**ST: What changes if any are you considering or implementing for the winning field in 2019?**

**WEBB:** Our softball field has a thick organic layer that creates a lot of challenges for us. Last year we had a contractor use a Koro Field Top Maker to verticut the field with impressive results. It was extremely aggressive but at the same time it was one of the most exciting things that I have done as a turf manager. In addition to repeating that we plan to increase our solid or core aeration from six times to at least 12-15 times this season and have finally put ourselves into a position to commit to an aggressive topdressing regiment. It has been a few years since we laser graded the field so we will do that as well.

**ST: What's the greatest pleasure you derive from your job?**

**WEBB:** I do not think that there is any better feeling than having an administrator or coach turn to you and ask what your thoughts are when it comes to the fields. The fact that they include us, place value and respect in our opinions, and consider us partners in the game now validates all of the long days, sleepless nights, and time away from our families that our team has pushed through over the past couple of years.

**ST: What's the best piece of turf management advice you have ever received?**

**WEBB:** "If you wait for the perfect conditions you will never get anything done." I bring that thought to work with me every day. Our athletic fields have packed schedules, our equipment is not

always ideal for the task at hand, and we never have enough staff. That is the reality for a lot of turf managers but you have to work with what you have and learn to find a way to get the job done.

**ST: How has your career benefited from being a member of STMA?**

**WEBB:** I think it is amazing that we all essentially do the same thing yet we do it so many different ways and face so many different challenges from year to year. STMA has enabled me to meet, get to know, and grow my network of fellow turf managers. That network gives me plenty of peers to call when I have a problem, want advice, or need a good venting session.

**ST: How are using social media at work?**

**WEBB:** This is actually my first year using Twitter. Having used it for a few months I think it is a great tool. Beyond the obvious networking uses I like being able to see how other turf managers maintain their facilities, tackle challenges, and that it gives us a window into each others' worlds. I know everyone likes to tweet glamour shots but I wish we all shared some of our less glamorous moments more often. We all make our fair share of mistakes along the way and tools like social media can help us support one another and allow others to learn from our mistakes and by doing that we can all grow as turf managers.

**ST: What are your passions and interests outside of work?**

**WEBB:** My wife and I welcomed our son into the family last year. I consider it a real honor to have won the Softball FOY award but I have now set my sights on securing the "Dad of the Year" award in 2019. The grass will always grow, games will still be played, and the work will still be there but I do not plan on missing a single memory with that little man as he grows up! **/ST/**

# RECOGNIZING OUR MEMBERSHIP

As our association grows, we need to take the time to recognize those who are celebrating milestone memberships. In this issue we are highlighting those who have been members for 5 years and those who have achieved 35 years. Congratulations to each of them and

to all of you for your commitment and dedication to advancing STMA's mission.

STMA will be sending out its membership pins this spring honoring those with years of service for 5, 10, 15, 20, 25, 30 and 35 years. In 2 years, we will be celebrating our 40th year!

## 35-year members

James Hornung, Sr.	Great Lakes Athletic Fields, Inc.	Buffalo	NY
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## 5-year members

Justin Allen	Camelback Ranch Spring Training - CWS Fields	Phoenix	AZ
Carmen Baciotti	Tomlinson Bomberger	Lancaster	PA
Nick Baker		Phoenix	AZ
Danny Battles	Tampa Bay Buccaneers	Tampa	FL
Benjamin Bauer	FC Dallas	Dallas	TX
Jason Beaty	JeffCo Public Schools	Lakewood	CO
Glen Bennett	ACLS - Aqua Cents	Fresno	CA
Micah Bennett	Ballpark of the Palm Beaches	West Palm Beach	FL
Scott Bennett	JeffCo Public Schools	Lakewood	CO
Joe Berube	Northwestern University	Evanston	IL
James Betz	Northwest R-1 School District	House Springs	MO
Glen Black	Air2G2 / GT AirInject	Jacksonville	FL
Paul Boekweg, CSFM	Brigham Young University	Provo	UT
Charles Brown	Journey House Center for Family Learning and Youth Athletics	Milwaukee	WI
Ron Butler	Classic Sports Turf, LLC.	Palm City	FL
Chad Cannon	East Ouachita Recreation District	Monroe	LA
James Catella	Clark Companies	Delhi	NY
Chris Cavender	Osceola County Stadium	Kissimmee	FL
John Cogdill	City of Boulder	Boulder	CO
Gary Collier	Ocean City Recreation & Parks	Ocean City	MD
Scott Condon		Melrose	MA
Christopher Crawley	City of Pawtucket	Pawtucket	RI
Tanner Delvalle	Penn State University Cooperative Extension	Pottsville	PA
Beau Dennis	Triple Crown Sports	Ft Collins	CO
Eulises Diaz	University of Illinois/Div Campus Rec	Champaign	IL
John Eden	Revive Organic Soil Treatment	Westminister	CO
Sean Egan	Pioneer Athletics	Cleveland	OH
Rich Elari	JeffCo Public Schools	Lakewood	CO
Joshua Evers	Northwest R-1 School District	House Springs	MO
Graham Flora	Chicago Cubs	Skokie	IL
Timothy Flowers	ESPN Wide World Sports/ Walt Disney World Resort	Harmony	FL
Sean Fong	Hawaiian Turfgrass	millilani	HI
Don Frantz	PBI-Gordon Corporation	Shawnee	KS
Rafael Garcia	Salt River Fields at Talking Stick	Scottsdale	AZ
Mark Giambri	City and County of Broomfield	Broomfield	CO
David Hadley	City of Rifle, CO Parks Department	RIFLE	CO
Ryder Hauk	Purdue University Athletics	Lafayette	IN
Georgeanna Heitshusen		N English	IA
James Hudson	Georgia State University	Stockbridge	GA
Kevin Hudson	AGH Management	Clermont	FL
Mark Hurd	Davis School District	Clearfield	UT
Justin Irvin	City of Boulder	Erie	CO
Vince Jagodzinski	Cub Cadet Turf (MTD Products)	Valley City	OH
Eric Jones	Clay County Parks & Rec	Green Cove Springs	FL

Spencer King	Real Salt Lake	Sandy	UT
Jon Kingsley	City and County of Broomfield Parks	Broomfield	CO
Jarod Knopp	Baltimore Ravens	Havre De Grace	MD
Nicholas Kovacs	Philadelphia Phillies	Philadelphia	PA
Zach Kuenzi	Barenbrug USA	Ramona	CA
Matt Ludwig	City and County of Broomfield	Broomfield	CO
Kevin Lyons	Shrewsbury Landscapes, Inc.	Shrewsbury	MA
Scott Maitoza	University of California, San Diego	La Jolla	CA
Tim Mans	St. Paul Saints	Saint Paul	MN
Nicholas Martin		Boynton Beach	FL
Thomas Martin	Pritchard Industries	Florham Park	NJ
Christopher Mason	Altoona Curve	Altoona	PA
Brian McGuire	University of Wisconsin RecSports	Madison	WI
Brian McGuire	City of Reynoldsburg Parks and Recreation	Reynoldsburg	OH
Sean McLaughlin	Mt. San Antonio College & Cal Poly Pomona University	Chino Hills	CA
Jorge Melena	ABM	Katy	TX
Bryan Meyer	St. Louis Cardinals	St. Louis	MO
Tim Mobley	City of Easley Recreation Dept.	Easley	SC
Bryan Muntz	Integraturf, Inc	Albany	OR
McClain Murphy	Gwinnett Stripers	lawrenceville	GA
Marc Novicki		Boulder	CO
David Nowakowski, CSFM	Harrel\ 's, LLC	Palm Bay	FL
Reid Olson	Clinton Lumbekings	Eden Prairie	MN
Michael Orban	Milton Hershey School	Elizabethtown	PA
Chris Parks	Vesico's Sports Fields	Lexington	KY
Dustin Pixton	Real Salt Lake	Sandy	UT
Alex Rathy	Sherman ISD	Sherman	TX
Barry Rees	Philadelphia Phillies	Philadelphia	PA
Denny Reichert	City and County of Broomfield Parks	Broomfield	CO
Mike Riggs	City of Maricopa	Maricopa	AZ
Joseph Sawyer	Barge Design Solutions, Inc.	Chattanooga	TN
Brandon Schanz	Erie County Convention Center Authority - UPMC Park	Erie	PA
Jordan Schrader	University of California Irvine - Intercollegiate Athletics	Irvine	CA
Robert Shine	City of Steamboat Springs	Steamboat Springs	CO
Austin Smith	Precision Turf, LLC	Buford	GA
Brett Sorge	Dick's Sporting Goods Park	Commerce City	CO
Chris Stevens	Stafford County Parks, Rec & Community Facilities	Stafford	VA
Adam Steward	Colorado Rockies Baseball Club	Littleton	CO
Kurt Steward	City and County of Broomfield Parks	Broomfield	CO
Anthony Streb	Greece Central School District	Fairport	NY
Darrel Thompson	City of Shawnee	Shawnee	KS
Trevor Turner, CSFM, CPSI	Horry County Schools	Conway	SC
Patrick Vaughn	City of Las Vegas Parks Dept	Las Vegas	NV
William Warpinski	Central Sod Farms, Inc	Centreville	MD
Taylor Williams	University of Tennessee	Corryton	TN
Brock Wilson	Mid-America Sports Construction	Lee Summit	MO
Shane Windham	Greenville County Schools	Taylors	SC
Hiram Zamora Culebro	Federacion Mexicana de Futbol Asociacion, A.C.	Toluca	Mexico

## STMA Conference days are shifting in 2020

Beginning with the 2020 Conference and Exhibition in West Palm Beach, FL, STMA will shift its annual event one day earlier in the week. The conference will officially begin on Tuesday, January 14, with the Opening General Session at 8:00

am and officially conclude Thursday, January 16, with the annual Awards Banquet. The previous model started on Wednesday and ended on Friday.

STMA will also host pre-conference education and the full-day Seminar on Wheels on Monday, January 13. Plans are underway to host another field rebuild with Project Evergreen as a charitable event on Sunday the 12th. This year more than 100 members came in a day early to volunteer their expertise to

**Continued on page 49**









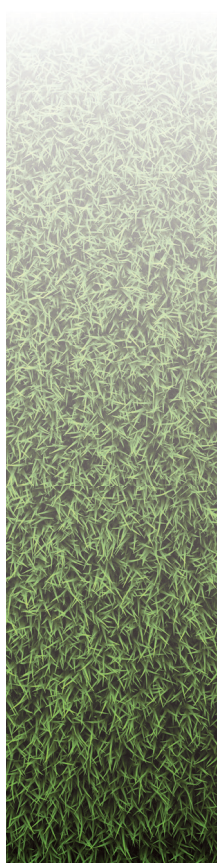
## Q&A with DR. GRADY MILLER

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### Questions?

Send them to Grady Miller at North Carolina State University, Box 7620, Raleigh, NC 27695-7620, or email [grady\\_miller@ncsu.edu](mailto:grady_miller@ncsu.edu)

Or, send your question to Pamela Sherratt at 202 Kottman Hall, 2001 Coffey Road, Columbus, OH 43210 or [sherratt.1@osu.edu](mailto:sherratt.1@osu.edu)



# Green fields of summer

**Q:** Our school system does not have much money. As a head coach (football), I get a little extra money to take care of the fields during the summer. I usually just try to keep them mowed and if there is some extra booster money, maybe apply one fertilization before fall. The school pays a contractor to apply a pre-emergence in early March so crabgrass is not usually an issue unless our fields go into summer really beat up. So my question is, what you would consider to be a good grass maintenance program for me to follow in the summer? I mow football, practice football, baseball, and softball. Another coach takes care of the "dirt" on the baseball and softball fields.

**A:** Questions related to this subject are pretty common each year. I realize that most coaches get into coaching because they love their sport, not because they wanted to take care of athletic fields. I have attended a few coaching clinics and heard the frustration expressed by coaches trying to figure out the best way to manage their fields. Many coaches have had to learn turfgrass agronomics on the job through trial and error with little to no training. The lack of quality equipment and adequate supplies for field maintenance may compound the problem.

No coach wants a player hurt because of the fields and they realize that athletes enjoy playing on quality surfaces. For this reason, I would encourage everyone involved in secondary school athletics to challenge their school or school district to consider the personnel options for taking care of their fields. I believe that if the school does not have a dedicated field/grounds staff, then contracting out some or all of the field maintenance is usually the best option. I am not saying a coach cannot be a great groundskeeper, but I find most either do not have the interest or expertise. Because of state laws related to pesticides, outside contracting those applications is often the entry point for school districts to use non-school employees for field maintenance.

Coach, I do not mean to take anything away from your desire and ability to take care of your athletic field. You probably already have a feel for your field conditions and know that some fields will need more aggressive maintenance practices than others. I would start with a plan to address bare areas on fields. Start renovation work as soon as the field is taken out of use for the summer. If the bare areas are larger than 10 square feet, develop a sprigging, sodding or plugging plan and initiate the work as soon as possible. One can often use their existing field as a source of plant material for light renovations.

From your comments, it sounds like your fields usually go into the summer a bit worn but not to the point that renovation is needed. If that is the case, then you are mainly looking at fertilization, aeration, and mowing. For fertilization, refer to soil test recommendations so that you are not applying

something that you do not need. Your field will need nitrogen fertilizer to maximize turf density and recovery from damage, but it may (or may not) need other nutrients. The rule of thumb is to apply 1 pound of nitrogen per 1000 square feet per growing month. I think it is fine to use a lower rate if your turf is dense and healthy; whereas you may want to even increase the rate in localized area that needs additional inputs for healthy growth in thin areas.

Aerification is very important for turfgrass health on high-use athletic fields. Use whatever equipment you have available for core aerification and do it as often as possible. I would suggest at least two aerifications during the summer. If you do not have aerification equipment, there are companies that will bring their equipment to the site and complete this task for a nominal fee.

You mentioned your mowing practices. The more frequent you mow bermudagrass when it is actively growing the better the turf density. For bermudagrass keep the height of cut below 2 inches. For hybrid bermudagrass closer to 1 inch is much better. If your schedule allows, I would suggest mowing at least two times per week in the summer months. In addition to increasing turfgrass density, regular mowing can assist with your weed-control program. Mowing is probably your most important practice given a minimum budget.

For weed control, you have the established pre-emergence program. You may need to implement a post-emergence program. If weeds begin to grow, tailor your post-control program to your weed species. You may even be able to get away with spot spraying problem areas. Your local county extension service can help you with weed identification and control suggestions.

I know those are general recommendations for you to consider, but this approach often works with low-maintenance fields. If there are specific issues (e.g., deep ruts in the field, invasive weeds, severe compaction, standing water) then we may need to consider more aggressive approaches specific to your issues. Otherwise, careful attention to fertilization, aeration, mowing, and weed control are the practices that will give you the greatest return. **/ST/**



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